

Antiquity

A QUARTERLY REVIEW OF ARCHÆOLOGY



Edited by O. G. S. Crawford, F.S.A.

DECEMBER 1933

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EDITORIAL NOTICES

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VOL. VII No. 28

DECEMBER 1933

Editorial Notes

THE present number of ANTIQUITY completes our seventh volume and we hope it will not be considered tiresome if our Notes are concerned with domestic affairs.



The last three years must have tested the vitality of many journals, and there is evidence that even those of a popular nature have felt the economic storm which our country and all parts of the World has experienced. It has affected the means of those who always support and encourage good literature, and it has also influenced many not so affected to curtail expenditure in directions where continued support would have been most helpful, and to them we appeal particularly.



We are glad to say that in spite of difficulties ANTIQUITY has held its own and we can safely assert that its reputation was never greater than now. In many respects it stands alone among the archaeological journals of the World. At the same time there are certain signs which give rise to anxious moments as to the future and cannot be ignored.

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So far we have not begun economies in the number of printed pages, or of illustrations (as will be evident from the contents of this number) but it is possible that eventually some change will have to be considered.

At the moment we do not feel that the question of such changes need be faced for the next year at any rate, and our hope is that they may be avoided altogether, for what we seek now is the help of our subscribers—those who have supported ANTIQUITY from its first number and those who began to subscribe later, and all who have encouraged us by friendly criticism and personal help.



We aim at securing at least another 500 subscribers. So far as our own efforts are concerned no opportunity is missed of introducing ANTIQUITY by means of information-leaflets and specimen copies, but there are many people (as we know from experience) who have never seen it. It is here that each one of our subscribers can help us. A card to either of the Editors (addresses on page 2 of our cover) will ensure particulars being sent to any part of the World. If at the same time a direct recommendation is given we feel sure it would have welcome results.



Another form of help by those able to give it is to subscribe for ANTIQUITY to be sent to a friend for one year (One Pound to any address). This often leads to the subscription being continued by the recipient. Several of our subscribers have for this purpose taken more than one copy of each number and a very good friend has this year been responsible for four copies.



Lastly—though we pause as to the wisdom of mentioning this—there may be some subscribers who are hesitating whether their own subscriptions shall be continued. To them we appeal on the grounds

EDITORIAL NOTES

that ANTIQUITY makes a real contribution to knowledge. We also ask the few subscribers who have already intimated that they would not require it after the December number to alter their decision.

We would also draw attention to the notice printed on the next page.



In our last number we published some remarkable air-photographs taken in the Oxford district by Major Allen ; and we threw out a hint that it was to be hoped that other countries would soon begin exploring their countryside by the same method. We were thinking particularly of France, partly because the conditions, geological and agricultural, of that country are peculiarly favourable, and partly because this method of research is one that seems specially adapted to the French genius.



Our contemporary, the *Journal des Débats* (28 September), which never fails to inform its readers of the contents of each number of ANTIQUITY, admits the great possibilities which await the air-archaeologist in France. M. Henry de Varigny, in his column entitled 'Revue des Sciences', suggests further 'que Crawford rédigeât un manuel de l'exploration archéologique par avion et photographie aérienne'. We do not however think that we can do more than we have already done, in 'Wessex from the Air', 'Air Survey and Archaeology', and 'Air-photography for Archaeologists' (to say nothing of articles and notes in ANTIQUITY) to lay down the first principles of the method. Surely with these publications the aviator should be able to do what is required? The 50 photographs published in 'Wessex from the Air' were the only ones taken by archaeologists ; all the others, until Major Allen's, were taken by pilots of the Royal Air Force in the ordinary course of their photographic duties. What our pilots can do, surely French pilots can do also. With the exceptions just noted, all our results in England have been obtained through the cooperation of archaeologists on the ground with aviators who had little or no special archaeological knowledge. It is tantalizing to think of the neglected opportunities, of the lost historical documents, so to speak, of a summer like the one just past. For an air-photograph of a

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new ancient site *is* a document of almost equal value to an original manuscript of the period ; and when that period is prehistoric, and therefore without manuscripts, it is the ideal substitute.



Since the last paragraph was written we have received a copy of the *Journal des Débats* (26 October), in which M. Henry de Varigny records the taking of air-photographs of an alleged ancient site in France. It is unfortunate that the first efforts should be wasted upon a fraud. The Côtes de Clermont, which is the site photographed, contains nothing but recent and quite modern structures of an agricultural nature, which should deceive no one with the least claim to be called an archaeologist. (We formed this opinion ourselves merely from the photographs published in *The Times*). The site of Gergovia is quite certainly the hill 7 kilometres to the south of Clermont Ferrand—a hill to which the name Dzargoy is still applied, and which was formerly called Gergoye. We recently exposed this false claim in ANTIQUITY (June 1933, pp. 216-9).



VOLUME VIII, FOR 1934

A renewal form for subscriptions for 1934 is inserted in this number and we shall be very glad if our subscribers will return it with their cheques as promptly as they may find convenient. The forms are omitted from copies sent to subscribers who pay through banks or who have already paid for 1934.

The Neolithic Age in Northern China

by CARL WHITING BISHOP

NORTHERN CHINA forms an integral part of the north temperate zone of the Old World. It is, moreover, connected with western Asia and eastern Europe by a long but continuous belt of steppe presenting no transverse barriers to migration, whether faunal or human. It cannot, therefore, be treated as a region apart, save in a very limited and subordinate sense.

The surface consists in the main of mountains in the west and of plains in the east. Over much of it lie thick deposits of loess, extending from Chinese Turkistan right across eastern Asia, nearly to the Yellow Sea.¹ These great accumulations of wind-borne soil were most probably formed during times roughly contemporary with the Riss-Würm glaciation of Europe.

That the north of China as a whole has ever been covered with forest in recent geological times is improbable. For loess tends to discourage a dense tree-growth, which would also have been checked by the annual inundation of considerable areas of plain. Nevertheless certain mountainous regions, now almost treeless, are described by ancient writers as well forested; while the faunal evidence shows that continuous strips of woodland must once have crossed northern China to connect the great forests of the south and centre with those of Manchuria.²

The plains, while thus not wholly devoid of trees, must have consisted in the main of vast areas of grass. Across them flowed numerous streams, chief among them the Huang Ho or Yellow river. These, subject to summer flooding, were bordered by shallow lakes, marshes, and reedy meres.

¹ On the extent of the loess in northern China, see V. K. Ting: Prof. Granet's 'La Civilisation Chinoise', *Chinese Soc. and Pol. Sci. Rev.*, 1931, xv, 268.

² Regarding the former existence of wooded areas in northern China, see A. de C. Sowerby: 'The Natural History of China', *Journ. North China Branch R.A.S.*, 1922, LIII, 3; also his *A Naturalist's Note-Book in China* (Shanghai, 1925), pp. 12 ff.

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The climate seems to have been rather warmer and more moist in late prehistoric times than it is now. For even during the full historical period, beginning in the 9th century B.C., the bamboo is mentioned as growing considerably to the northward of its present limit ; and in a peat deposit near Peking have been found bones of the water-buffalo and the water-deer (*Hydropotes inermis*), warmth and moisture-loving creatures which could not live in that region today.

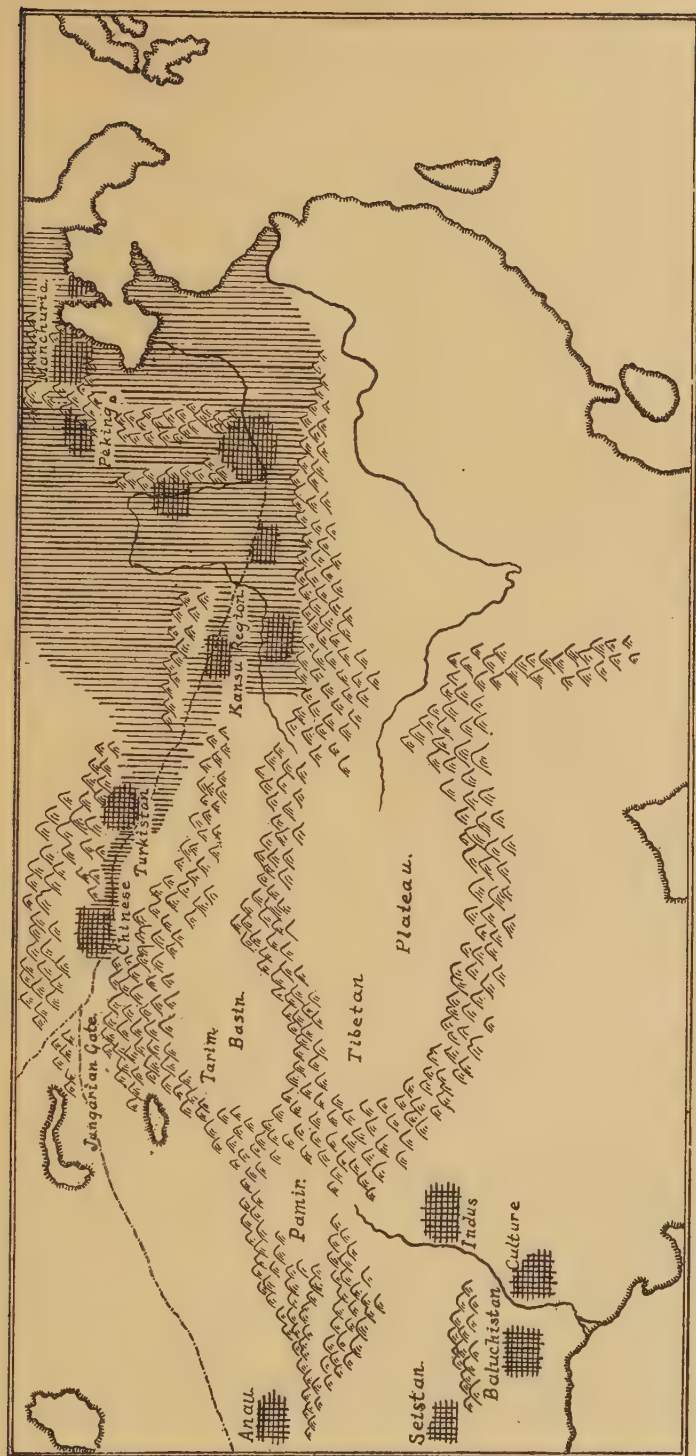
Both animal and bird life were exceedingly abundant. Forest, parkland, and steppe types all occurred. In addition to the present-day forms there were many which have since disappeared ; among these were the elephant, probably the rhinoceros, and various species of wild oxen.

Throughout the more recent human period, movement in south-eastern Asia has generally been from north to south ; or, perhaps more accurately, from the centre of the continent outward, toward its periphery. To inner Asia, then, we must turn for our earliest evidences of post-glacial human activity.

In times probably contemporary with the closing phases of the European Ice Age there existed in Mongolia a Palaeolithic type of industry. This was eventually replaced by another, which, like its equivalent in the west, made use especially of microliths. In Europe the Epipalaeolithic disappeared before a developed Neolithic, coming apparently from the east. In Mongolia, on the contrary, it seems to have developed by degrees into an early Neolithic.³ Whether this evolution took place there spontaneously, or whether it was the result of culture-borrowings from regions to the west, it is still too early to determine.

Neither the Epipalaeolithic nor any early phase of the Neolithic have been found in China proper. There the Palaeolithic occurs at the base of the loess, while just beneath the present surface, and even actually upon it, remains of a fairly well developed Neolithic are extremely abundant. Between these two cultural horizons lies an enormous gap. During much of the Late Pleistocene, while the loess was being deposited, steppe-desert conditions unfavourable to human existence are believed to have prevailed in northern China. It may be,

³ Concerning this development, see N. C. Nelson : ' The Dune Dwellers of the Gobi ', *Natural History*, 1926, xxvi, 251 ; also his ' Archaeological Researches in Northern China ', *Amer. Anthropologist*, 1927, xxix, 197.



Northern Chinese Neolithic IIII; Painted Pottery IIII; Migration Routes -----.

FIG. I

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of course, that evidence of an earlier stage of the Neolithic, or even of an Epipalaeolithic, will some day come to light ; but this at present seems little likely.

The Neolithic which we do find there was essentially that which came to exist throughout a large part of eastern Asia. Decidedly northern in cast, some of its elements have a nearly circumpolar distribution. It was notably homogeneous in character, both in time and in space. Hardly any signs of development appear save in certain limited areas, and even there only under the influence of stimuli from other lands. This indicates a very early hardening into a rigid routine, a fixed and immutable pattern, perfectly adapted to its environment but incapable of initiating progress from within.

The skeletal evidence shows that the physical type of the Neolithic people of northern China was that which predominates in the same region today ; there has been no break in racial continuity.⁴

As in Europe, so in northern China, settlement in Neolithic times sought the drier and more open lands, since these could more easily be brought under cultivation by people having no effective means of clearing forests or draining marshes. For this reason, in part, traces of early habitation are most abundant in upland regions. Their relative scarcity in the plains is, however, probably due to another cause also ; for there, such remains as escaped being buried under deposits of silt would tend to be obliterated by long and intensive cultivation.

Sites are sometimes extensive. One partly excavated of late was found to be nearly seven miles in length by over a mile in breadth ; but there is no reason to suppose that more than a small portion of this area was inhabited at any one time (fig. 3). Sometimes a favourable spot was re-occupied after a considerable interval ; the large site just mentioned disclosed, in the portion excavated, three periods of settlement.

The dwellings of the Neolithic Chinese were beehive-shaped pits, usually circular but sometimes elliptical in plan (fig. 4). These vary in diameter from four metres to two or even less ; in depth they average under three metres. Some of the smaller ones can only have

⁴ On this, see Davidson Black : ' The human skeletal remains from the Sha Kuo T'un cave-deposit in comparison with those from Yang Shao and with recent North China skeletal material', *Palaeontol. Sinica*, ser. D, vol. 1, fasc. 3 (Peking, 1925), p. 98 ; also ' A note on the physical characters of the prehistoric Kansu race', *Mems. Geol. Survey of China*, ser. A, no. 5 (Peking, 1925), *passim*.

THE NEOLITHIC AGE IN NORTHERN CHINA

been used for storage purposes ; similar storage-pits are made in the same region today.

These dwellings were probably roofed over with timbers upon which earth was heaped. Entrance seems always to have been from the top ; for neither lateral doorways nor pivotal door-stones have been found, though both are quite usual in the modern loess cave-dwellings. At the large site mentioned above, the pits of the uppermost occupation-stratum were only one and one-half metres deep ; this indicates that huts had by that time come to project farther above ground. Interiors were in many cases finished off in lime plaster, well-smoothed, while a grayish layer at the bottom suggests the use of floor coverings, perhaps of mats, rushes, or sheets of bark. Both in and near some of the pits have been found earthenware cooking-stoves resembling those used by the modern peasantry.

Villages were perhaps vacated yearly, from spring until autumn, if we may judge from the practice in vogue among the Chinese peasantry of the earlier historical period. For these seem to have left their permanent habitations at the beginning of the planting season to occupy huts (probably raised on piles or built in trees) near their fields, that they might protect the latter from the ravages of wild animals and birds.

No evidence either of earthworks or of stockades has been found in connexion with Chinese Neolithic villages. It is possible that these were protected by *zarebas* of jujube thorns like those which crown the mud walls of hamlets in the same region today ; but, as we shall see, there is little sign of warfare, and settlements appear to have relied for protection chiefly upon their position.

Villages seem not to have been occupied very long ; for they have rarely grown into mounds. It must be borne in mind, however, that *débris* will gather far more slowly on a site consisting of pit-dwellings than on one occupied by buildings ; for ruins of the latter form the principal element in such accumulations. The practice of shifting villages about was undoubtedly due principally to the method of cultivation, which rapidly exhausted the soil in the vicinity ; and to that practice, rather than to any great density of prehistoric population, must be attributed the very general distribution of Neolithic remains over so many parts of northern China.

When the use of pit-dwellings ceased in that country is unknown. They remained the habitations of the lower classes until well along in the Chinese historical period, and certain 'barbarian' neighbouring

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peoples are represented as using them much later still ; in parts of eastern Asia they survive even today. The Chinese character *hsüeh*, now meaning a den or cave, in its older form clearly represents a vertical section of such a pit-dwelling with its timbered and domed roof (fig. 2). Archaeology has in this instance, as in so many others, confirmed the evidence of epigraphy.



FIG. 2. CHINESE CHARACTER *HSÜEH*
IN ITS MODERN (left) AND ANCIENT
(right) FORMS

The Neolithic people of northern China depended principally for subsistence upon planting ; this must have been carried on by the *milpa* or *jhūm* method, the only one possible at that stage of culture.⁵ There is no trace whatever of a pastoral form of life. A few bones of wild animals and birds and the considerable use of antler as the material for various implements show that some hunting was done ; but little reliance seems to have been placed upon it as a means of procuring food. Fishbones and the shells of tortoises and freshwater molluscs are found ; and certain stone objects may be net-sinkers, although nothing suggesting a fish-hook has yet been reported. It is obvious, however, from the archaeological evidence, that both hunting and fishing played a very subordinate part to planting.

Certain pierced stone discs may have been weights for digging-sticks. Large leaf-shaped stone objects must have served as blades for mattocks, or perhaps for foot-ploughs like the Hebridean *caschrom*⁶ ; a nearly identical implement, now of course shod with iron, is still used by the Chinese peasantry in some areas, and appears from the records to be of great antiquity. Other objects are obviously small stone hoes (fig. 5).

South of the Yellow river, in association with polished stone axes, occur worked stones bearing a superficial resemblance to Campignian picks ; these however may belong rather to the southern than to the northern phase of the Chinese Neolithic. An object made from the shell of a freshwater mussel, with serrated edge and a constriction near one end as if for lashing to a handle, seems pretty surely a sickle. A fragmentary implement from Kansu, consisting of a bit of bone with microlithic blades set in a groove, may have served a similar purpose.

⁵ By this method, plots of ground are cleared, often by fire, and are then cultivated for two or three years, until their fertility has become exhausted, when they are abandoned.

⁶ On the *caschrom*, see E. Cecil Curwen : ' Prehistoric Agriculture in Britain', *ANTIQUITY*, 1927, I, pp. 261 ff.

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Another proof of the importance of planting in Neolithic China is the abundance of mealing-stones—flat slabs rubbed down smooth on one side ; these may be of basalt, granite, or even sandstone. Both in the modern northern Chinese peasant and in his Neolithic ancestor, it may be noted, the teeth are much worn down—the result of a gritty diet, full of mineral impurities. Used on these mealing-stones in order to grind or at least bruise the grain were certain stone cylinders with knobbed ends. These are said to be common in Siberia also ; and they are likewise found in Japan. They have been interpreted as phallic symbols, or as badges of rank. That some of them were used for grinding grain is certain. By reason of that very association, however, they may well have come to play a part in the fertility cults of Neolithic eastern Asia.⁷ Some of the Japanese examples are far too large and too highly ornamented to have served any functional purpose ; they must have had some symbolic significance, almost certainly of a religious character.

Fields were probably tilled in common, as they were indeed far on into the historical period ; for the practice of *jhūming* is incompatible with individual ownership of plots. In all likelihood the work of clearing the ground and preparing it for cultivation was done by the men, while the actual sowing and reaping were performed by the women, for magical reasons connected with the idea of fertility ; such at least is the procedure, and such the motives for it, among the more backward peoples still surviving in southern China and Indo-China.

Leaf and root crops were pretty surely grown by the Neolithic Chinese, as by their modern descendants ; for man must have brought plants of that type under cultivation far earlier than any of the cereals. Thus far, wheat has not appeared, although it was already known in China at the beginning of her historical period. The earliest cereal grown there, as probably in most lands, seems to have been millet. The common species, *Panicum miliaceum*, has been found on Chinese Neolithic sites. In the early writings this is the chief cereal mentioned, and it is the only one to possess a religious significance—itsself a sign of great antiquity.

Among other grass-seeds used for food, if not certainly cultivated, were those of *Setaria lutescens*, a common weed extending clear across Eurasia and sometimes, though improperly, called *S. glauca* ; its seeds have been found in a Neolithic cooking-vessel. From one site, grains

⁷ Compare the way in which the humble shepherd's crook has developed into the bishop's crozier.

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of *Sorghum vulgare* have been identified. If these date in reality from Neolithic times, as appears certain, their discovery is of decided interest ; for hitherto it has been generally believed that this valuable food plant, the *kaoliang* or ' giant millet ' of the modern Chinese, was introduced from India about the 6th century A.D. No evidence yet exists that rice was known in Neolithic China save perhaps in Kansu, where its husks are said to have been found incorporated in fragments of pottery.

The Neolithic Chinese may, like their descendants of early historical times, have made a sort of beer from millet ; for its manufacture extended over a large part of eastern Asia, where in some areas its use has continued down to recent or even modern times. The process usually employed has been that of chewing the millet and then steeping it in water ; the knowledge that this will set up alcoholic fermentation (through the action of the ptyalin in the saliva) is widespread, and apparently very ancient.

On the basis of its possession of domestic animals, the Neolithic culture of China cannot be rated as a high one. That of Europe had the ox, goat, sheep, pig, and dog.⁸ In China it is only the dog and the pig which certainly go back to Neolithic times. Their bones, and especially those of the latter, occur in enormous numbers, while those of other animals are almost wholly absent. Thus on the large site already mentioned, along with vast quantities of dog and pig bones and a very few of wild animals like the leopard and water-deer, there were found only a few vertebrae of a small bovid and the fragmentary mandible of a young sheep ; and there is no assurance that even these did not belong to wild individuals.

There is no sign that the domestic fowl was yet known in China during the Neolithic, although it may already have been present in the south. In the Chinese Bronze Age, on the other hand, it was the fowl, along with the pig and the dog, which provided the chief source of flesh food for the peasantry.

The most characteristic implement of the Neolithic everywhere, the polished stone celt, occurs in China in vast numbers. Just as in so many other lands, there also it is associated with thunder, and is sometimes thought to have curative properties. It is more common in its adze form than as an axe. Possibly it was hafted in a ' sleeve ' of antler ; for the Chinese carpenter today hafts his iron adze (in wood,

⁸ The horse as a domestic animal *may* have appeared in the Occident just before the close of the Neolithic there.

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of course) on the same principle. No shaft-hole stone axes have been found in China proper ; examples from Mongolia seem from their shape to be imitations of metal forms, as do also knobbed stone mace-heads from the same region.

Certain grooved stone objects perhaps served as net-sinkers, while others were axes or hammers ; the latter fact is one among many which point to northern contacts. In some districts today, grooved stone mallets are made by shaping the head and then bending a split withy around it for a handle—almost surely a clear case of a Neolithic survival.

Of frequent occurrence are rectangular or semi-lunar stone knives with round perforations, similar to forms found elsewhere in eastern Asia and even among the Eskimo of America.*

Arrowpoints are found, though in no great numbers. They are of various shapes and sizes, and are made of slate, chert, bone, shell and other materials. Different types occur together in the same deposits and were apparently used at the same time. Stone arrowpoints are mentioned among the articles of tribute sent from the Yangtze valley in early historical times ; and we know that they continued in use in parts of northeastern Asia until very late. Whether the bow used during the Chinese Neolithic was of the composite or ' reflex ' type employed in China in all later times, we have no means of knowing.

Stone and clay balls are numerous. Possibly the smaller ones were missiles for the pellet bow, known very early in China. The larger specimens may have been sling stones. The Chinese sling, used as a weapon of war in recent centuries and still surviving as a child's toy, consists essentially of a cord or thong attached to a short handle.

Scarcely any of the implements found can be interpreted with certainty as heads of spears, javelins, or harpoons ; weapons of this class, as far as our evidence goes, seem to have been little, if at all, used.

Objects very numerous on Chinese Neolithic sites are rings of many shapes and sizes, in stone, clay, shell, carved bone, and perhaps other materials. Their vast numbers show that they were articles of importance. Some may have been pendants, others bracelets or armlets ; others still, it would seem, were votive offerings. There occur also picks of antler ; bone awls, hairpins, and perforated needles ; stone beads ; cinnabar, perhaps used for painting the body or face ; fragments of nacre ; and many other remains of a miscellaneous sort.

Textiles have not survived ; but their impressions on pottery show

* Compare the disc-shaped (but of course unperforated) flint knives of the British beaker-folk ; described by J. G. D. Clark in *Proc. Preh. Soc. East Anglia*, 1929-32, VI, 41-54.

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that weaving was known. Some kind of fibre-producing plant, in all probability hemp, may have been grown, and perhaps bark-cloth was made. Furs were pretty surely worn in cold weather, as we know they were later ; the modern northern Chinese peasant makes great use of sheepskin garments. Impressions on pottery, again, show that baskets and matting were woven.

The bone needles found on practically all sites prove that sewing was done. Thread was spun with the aid of spindle-whorls of clay or stone ; these occur in large numbers. The eyes of the needles were almost certainly bored with the help of the bow-drill, as were, in all probability, the perforations in stone knives and other objects. The bow-drill is still used by the modern Chinese carpenter and joiner. In Neolithic times it was most likely employed in making fire as well as in drilling holes.

Pottery occurs in huge quantities on Chinese Neolithic sites. Usually it is very fragmentary ; only in association with burials do we often find complete vessels. Broken ones were sometimes cleverly mended by drilling small holes through the opposing edges and then lashing them tightly together ; this practice clearly adumbrates the modern Chinese method of repairing crockery with tiny metal clamps. Pottery was made by the 'coiling' process, once general in eastern Asia and still used in parts of China itself.

Most of the shards are grey, coarse, poorly levigated, and badly fired. A few are pinkish buff in colour, of finer texture, and with a rather powdery surface ; while certain harder specimens show a dark blue-gray fracture. They often bear impressions, of string, of textiles, of matting, or of basketry. Incised decoration is likewise found, sometimes of the 'herring-bone' pattern, repeated in horizontal registers. Surfaces were also ornamented with ribbons of clay, often marked with the finger-nail or pinched up in regularly spaced projections.

Vessels display a wide range of form, including ovoid, spheroid, carinate, cylindrical, and 'barrel' shapes. Bottoms are flat, concave, rounded, or pointed ; and shoulders bear horizontal lugs or vertical loop handles. Large jars with everted rims occur, as do graceful flasks with well marked necks and flaring mouths ; a 'fruit-stand' type on a high perforated pedestal closely resembles specimens found in Japan (figs. 6-7). Two forms very characteristic of the northern Chinese Neolithic ceramics (except in the province of Kansu) are the earthenware tripods known respectively as the *ting* and the *li* (fig. 8).

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The *ting* calls for little comment ; it is merely a bowl raised on three solid legs. In the *li*, the legs are hollow, and form extensions of the interior cavity of the vessel ; this type was perhaps used for sacrificial purposes.

Among other earthenware objects are whistles ; phalloi ; and what appear to be highly conventionalized birds' heads ; these were perhaps all of them cult-objects. Kilns for firing pots have been found, and also large quantities of a vitreous and vesicular greenish slag apparently connected somehow with pottery making.

The wares described above are those which in a general way characterize the Neolithic culture of northern China. Another and far higher type, whose distribution and nature imply a Late Neolithic intrusion from the west, is the painted pottery⁹ (fig. 9).

Polychrome wares are known from many sites of western Asia and eastern Europe. Similar pottery has now been traced along the great trans-continental migration route, from Chinese Turkistan¹⁰ across northern China proper, clear to southern Manchuria. It did not however spread over the entire area occupied by the Chinese Neolithic, but is much more restricted in distribution. It has been found almost exclusively in the loess regions. While the evidence is not yet conclusive either way, it appears to show that the painted ware was diffused along what were in historical times the principal routes of travel, while the Neolithic sites on which it does not occur are those in the more secluded localities.

Unless a well-developed trade can be proved, the appearance of a new type of pottery in a given region usually betokens successful invasion. For this, in China no evidence has yet appeared. It is only the presence of the painted ware itself that differentiates certain sites from others where it is absent. Nevertheless, its comparative homogeneity from end to end of its vast territory suggests that the polychrome ware was diffused over northern China by some process more rapid than mere culture-creep, though what that process was, we cannot say.

Remarkably rich in ceramic forms, the Chinese painted pottery is

⁹ This was first made known to the world, slightly over a decade ago, by Dr J. G. Andersson, then connected with the Geological Survey of China.

¹⁰ Painted pottery of the Chinese group, in a Neolithic association, has recently been reported from the vicinity of Urumchi and Hami, in Chinese Turkistan, by Dr P. L. Yüan, of the Sino-Swedish Central Asiatic Expedition. It had previously not been known to occur west of Kansu.

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well levigated and fairly hard in texture ; in colour it varies from buff to dark red ; and it is often highly burnished. Several different designs occur, among them the ' lattice ' and the ' dot-and-triangle ' patterns ; no zoömorphs have been found on Chinese Neolithic sites. The painting is often in black, or in black and white, on a deep red ground ; or it may be in red and black on a white slip. It seems to have been done with some sort of brush.

Another distinct class of Neolithic pottery recently brought to light in northern China is a fine black ware. In this the surface is plain and highly polished, being sometimes actually lustrous. Some specimens are almost incredibly thin ; one, a broken cup excavated under scientific conditions,¹¹ measured less than half a millimetre in thickness—little more than that of an ordinary playing-card. No trace of metal has been found with this ware, the associated culture being of the usual northern Chinese Neolithic type.

The scanty evidence available suggests that the black ware may be slightly later than the painted pottery, or at least that the two overlap ; possibly also the black type is more especially characteristic of north-eastern China.

Whether the potter's wheel was already known in China in any form during Late Neolithic times is still a debated question. Apart from what appear to be definite indications of its use, it would seem *a priori* that in a large number of instances some mechanical means of shaping must have been employed ; this applies especially to the very thin specimens of the black ware, and only less so to much of the painted pottery. The question needs more study before it can be answered decisively.

Of the social organization and religious beliefs prevailing in China during Neolithic times, we necessarily have little direct knowledge. Hence we can only try to reconstruct them, in a measure, from the practices of the more backward peoples still inhabiting southeastern Asia ; from the archaeological evidence ; from ancient literary notices ; and from survivals among the Chinese peasantry themselves, the lineal descendants of the Neolithic people.

That the latter traced descent through mothers, and that women played an active or even a leading part in institutional life, seems fairly certain. No inference can be drawn as to the existence of chieftainship, either male or female ; but sorceresses, mediums, and priestesses have

¹¹ By Dr Li Chi, of the Academia Sinica.

PLATE I

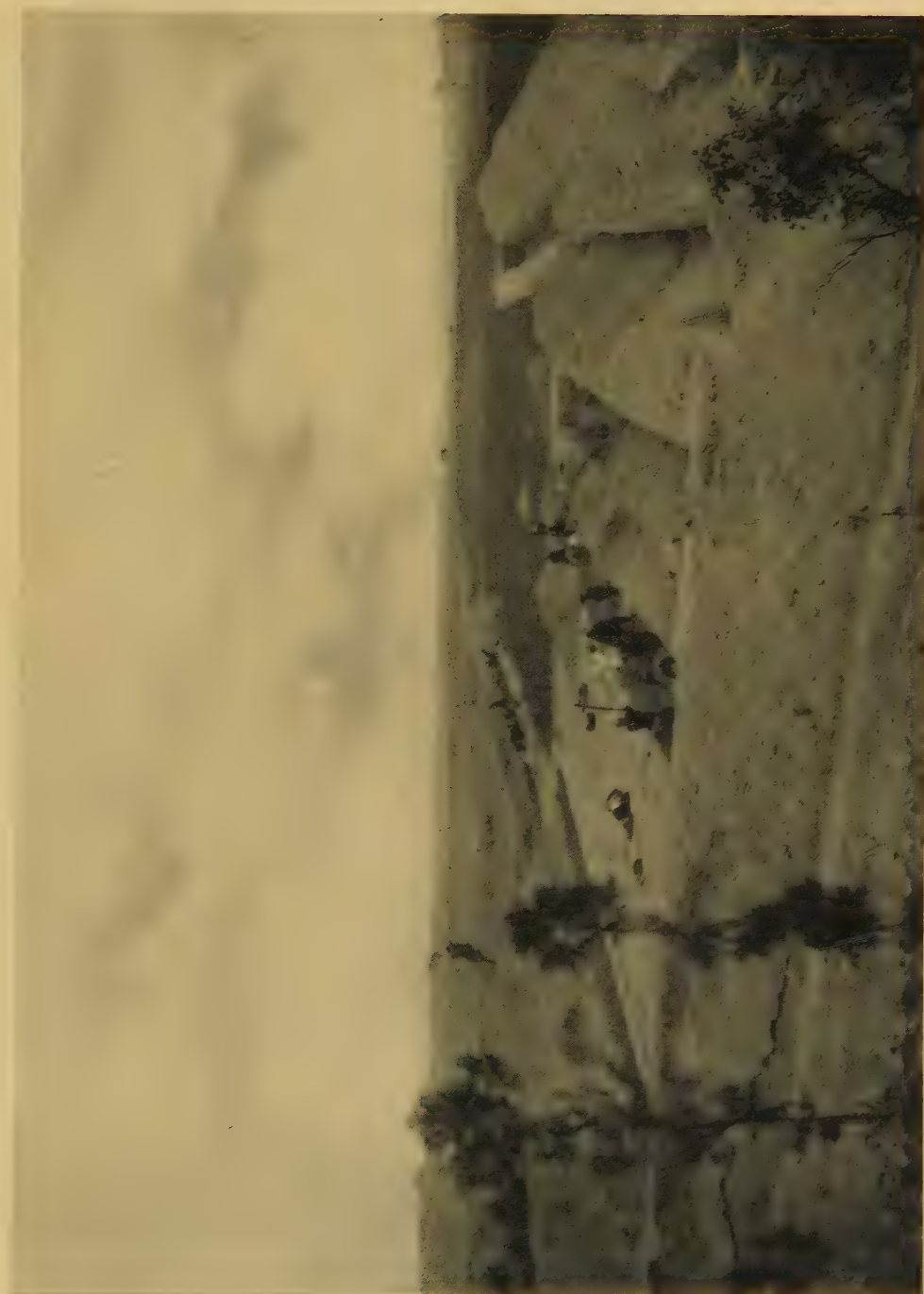


FIG. 1. NEOLITHIC DWELLING SITE, SHANSEI PROVINCE, NEAR MOUTH OF T'ŨN RIVER. SEP. 1930

PLATE II



FIG. 4. PIT-DWELLING SHOWING DOMED ROOF AND CIRCULAR FLOOR-PLAN. (See p. 39.)

PLATE III



FIG. 5. SMALL STONE HOES. (See p. 394)
The right one measures 108 mm. in its greatest length. The left one from the collection of S. E. Wilson, Esq., Tai-ku, Shansi.

PLATE IV



FIG. 6. CHINESE NEOLITHIC JARS. (*See* p. 398)
(height, just under 30 cm.)

PLATE V

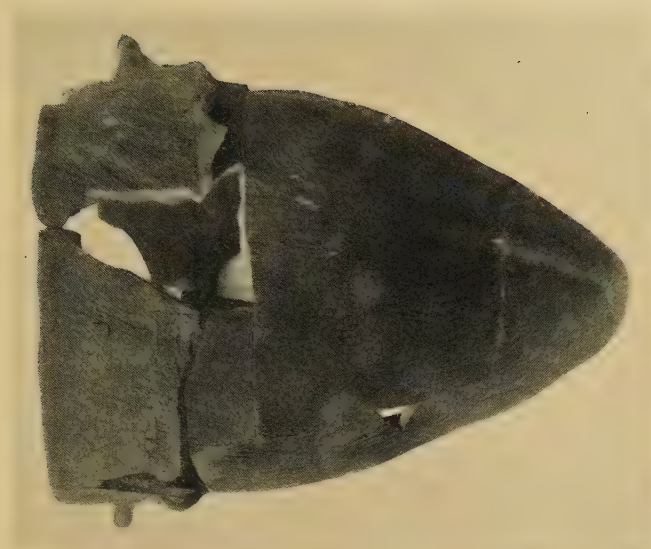


FIG. 7. CHINESE NEOLITHIC JARS. (See p. 398)

Left : with neck and flaring mouth ; height, 34 cm. Right : pointed bottom and collar, and horizontal lugs ; height, 31 cm.

PLATE VI



(Height 24 cm.)



(Height 18 cm.)

FIG. 8. TYPES OF *LI* TRIPOD, WITH HOLLOW LEGS. (See pp. 398-9)

PLATE VII



A



B



FIG. 9. PAINTED NEOLITHIC POTTERY FROM KANSU PROVINCE. (See p. 399)

The right-hand jar of 9B is from the beginning of the Chalcolithic Period (note zoomorphs)

After J. G. Andersson, *Archaeological Research in Kansu*

PLATE VIII



FIG. 10. HUMAN REMAINS IN A NORTHERN CHINESE NEOLITHIC PIT-DWELLING; POSSIBLY INDICATIVE OF SACRIFICIAL RITES
(See pp. 401-2)

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always wielded vast influence in Chinese peasant life, and there is every reason to believe that they did so in Neolithic times as well. Social groups were, however, probably governed far less by individuals than by the power of immemorial custom ; exactly the same is true of most of China at the present day.

Religion, as among so many planting peoples, seems pretty clearly to have been based upon the idea of fertility in general. While ghosts, spirits, trees, rivers, mountains, the heavenly bodies, and various natural phenomena were regarded as potent for good or evil and therefore to be placated, the central figure in the prehistoric peasant cults was perhaps a Goddess of Earth, looked upon as the supreme source of all fecundity and generative power. Of such a belief we have little concrete evidence ; for even the nude female figurines in clay, believed to represent a similar concept in so many other lands, have not been found in China. But in the earliest records there appears a Goddess of Earth, whose worship among the peasantry was conducted by sorceresses at least until the 2nd century B.C. That the Chinese Mother Goddess¹² was regarded as possessing human form is doubtful ; for apart from the absence of cult-figures already mentioned, the written symbol used to denote her in early historical times was not anthropomorphic in character.

Ceremonies for the promotion of fertility pretty surely included seasonal dances and orgiastic mating festivals like those which have survived in so many parts of eastern Asia until recent or even modern times. Earthenware phalloi occur on Neolithic sites, and traces of phallicism still exist in China and many adjoining lands. Marriages, initiated at such festivals, were probably exogamous ; that is, they could only take place between individuals or perhaps groups belonging to different matrilineal clans ; such at least appears to have been the practice in the peasant communities of the early historical period.

The cults of planting people are often bloody and cruel.¹³ Those of the Neolithic Chinese appear to have formed no exception. It is likely that they practised a rite of human sacrifice, apparently by clubbing, to judge from the crushed and mutilated condition of some of

¹² Although her proper designation may perhaps best be translated as ' Ruler of the Soil ', in the early writings she is often called ' Mother of All '.

¹³ A classical instance is that of the Khonds of Orissa, with their Meriah sacrifices ; that similar practices once prevailed over great part of southern and eastern Asia is highly probable.

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the skeletons found¹⁴ (fig. 10). Legends of the Andromeda type, so widespread over eastern Asia, point to the former existence of sacrifice by exposure. The occurrence of ritual cannibalism cannot be asserted with assurance, although the condition of the skeletons just mentioned would rather suggest it ; but it is often found in connexion with human sacrifice among planting peoples, and belief in the magical efficacy of human blood and flesh has persisted among the lower classes in China throughout her history.

The dead were disposed of in Neolithic China by inhumation. The position of the body varies ; sometimes it lies on its back, sometimes on its face ; or again, it may rest on its left side. Only in instances like those mentioned in the preceding paragraph have human bones been found piled up helter-skelter, broken, crushed, and with scarcely any two in normal articulation. So far, there is no evidence that cremation was practised in prehistoric China.

That anything like organized warfare existed is unlikely. The headless skeleton of a youth found buried in a pit-dwelling may mean that head-hunting was carried on. It has been suggested that the greater degree of variation found in the skulls of females as compared with those of males may point to the capture of women. But in general, warfare must have been of the desultory and haphazard type common among Neolithic populations nearly everywhere. The comparative scarcity of weapons and the absence of fortification point to the same conclusion.

The rarity of objects or materials imported from a distance implies that trade was little developed. Communities must have been very nearly self-containing ; probably for each the world was bounded by its own visible horizon. This same parochial outlook survives scarcely altered among the Chinese peasantry of the present day.

It was the northwestern province of Kansu that witnessed the highest development of prehistoric culture yet found in China. There the proportion of the painted pottery to the old coarse ware is far larger than elsewhere, while at the same time there is the closest resemblance to the polychrome types of the west. Only in Kansu, too, has a Chalcolithic phase of culture been found ; everywhere else in China

¹⁴ Animals, notably the gayal or mithan, are still sacrificed by clubbing to death in Farther India, and men were slain there in similar fashion not so very long ago ; the underlying motive appears to be the avoidance of any loss of blood, supposed to be of magical fertilizing efficacy.

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there seems to have been superposed directly upon the Neolithic a well-developed Bronze Age civilization, most of whose fundamental traits are those of the same cultural stage in the Occident.

The painted pottery of Kansu falls into two distinct categories, marked by radically different shapes and designs. Both classes retain the same stone implements throughout ; but one—the later, as excavation has shown—displays a knowledge of copper, slight at first but steadily growing in amount. Nothing suggests that this was an indigenous development, and the contrary is far more probable. For along with copper, there appear in Kansu several other previously unknown culture-elements. Among these are the construction of mud walls around villages ; new species of domestic animals—the sheep and perhaps the horse ; and possibly wheeled vehicles. Zoömorphs now appear on painted pottery ; among them, friezes of conventionalized birds recall designs occurring far earlier at Susa. The presence of turquoise, and even more of cowry shells, obtainable only on distant tropical coasts, indicates a considerable development of trade. The appearance in Kansu, during its Chalcolithic period, of the pottery tripods, the *ting* and *li*, already mentioned, points to contacts of some sort with regions farther east. Evidently we are here in the presence of something differing widely from the ancient and static culture of Neolithic eastern Asia.

That the Chinese New Stone Age dates back at least three or four millennia before the dawn of history in that country seems fairly clear. It is still more certain that a long time elapsed between its commencement and the appearance of pottery of the polychrome class. For on the higher and therefore older river-terraces of the northwest occur Neolithic remains without painted pottery, while the latter appears on the lower and younger terraces.¹⁵

In southwestern Asia the making of painted wares goes back well toward the beginning of the fifth millennium B.C. at latest. When it first appeared in the steppe regions north of the mountain zone, we do not as yet know ; but the destruction of some of the sites on which it occurs there and the consequent dispersal of its makers seem to have taken place somewhere around 2600 B.C.¹⁶

¹⁵ Verbal communication from Dr P. L. Yüan of 3 March 1933.

¹⁶ Regarding this dating, see Harold Peake and H. J. Fleure : *The Steppe and the Sown* (' Corridors of Time ' series), pp. 40 and 44.

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It appears certain, for various reasons, that the full Bronze Age complex reached China, somewhat abruptly, during the former half of the second millennium before our Era.¹⁷ Now the archaeological evidence indicates that painted pottery was known in China for at least two or three centuries before the close of her Neolithic. Its introduction there must accordingly have taken place toward the close of the third millennium B.C., or at all events during its latter half.

The Bronze Age civilization of China remained throughout its duration the nearly exclusive property of a small and warlike class of nobles—landholders, rulers, priests, and fighters. Bronze was almost wholly reserved for the uses of war, luxury, and worship ; at no time was it sufficiently plentiful or cheap to be used as the common material for ordinary tools and implements. There is no evidence, archaeological or other, that its introduction greatly modified the ancient Neolithic culture of the peasants. For their simple needs stone was quite adequate, besides being so much more easily procured, and they seem to have retained its use through the greater part of the Bronze Age. Although the painted pottery disappeared,¹⁸ the old coarse ware continued to be made. The extraordinary abundance of remains strewn about on the present surface of the soil affords good evidence of the late persistence of the Neolithic in China. This receives further confirmation from the use of the written symbol for 'stone' in the composition of many characters denoting the actions of cutting, hacking, and piercing.

Iron began to be used in China around the middle of the first millennium B.C., at first for domestic utensils and farming implements ; as the material for these, it appears directly to have superseded stone. In this sense it may be said that the peasantry of China never went through an age of Bronze at all, but passed from the Late Stone Age at once into that of Iron.

¹⁷ For a discussion of the evidence bearing upon the chronology of the Chinese Bronze Age, see C. W. Bishop : ' The Chronology of Ancient China ', *Journ. Amer. Oriental Soc.*, 1932, LII, 232-47.

¹⁸ It survived in China itself until toward the close of the second millennium B.C. and possibly a good deal later ; in Manchuria varieties of it were being made apparently not long before the beginning of our Era.

Ostia in the Light of Recent Discoveries

by GUIDO CALZA

Director of Excavations, Ostia

TWENTY years have gone by since I was first appointed Director of Excavations at Ostia, and I feel that I have devoted the better part of my activity as an archaeologist to the great task of bringing the dead city back to life.

All that was known about Ostia when scientific investigation was first started there was the legendary tale of its foundation at the mouth of the Tiber by Ancus Marcius, fourth King of Rome ; its probable expansion under the republic, although the growth of Pozzuoli and the clogging up of the river's bed would support the theory of a period of decline for Ostia at that time ; and its tremendous development under the Empire, especially in the second century. Of this there was proof in the vestiges of imperial constructions rising above ground and in the historically ascertained fact that Ostia was Rome's trading centre and outlet on the sea. Little or nothing was known of the later period of the city, nor of its decline and final disappearance.

On the other hand the existence of Ostia was never quite forgotten and certain medieval acts of vandalism, together with partial explorations effected after the year 1500 and a few attempts at scientific research ordered by the Papal Government, did throw light upon the extension of the old Roman city and gave inklings of its prodigious wealth.

The first modern campaign conducted in view of possible historical and archaeological results had, as chief object, to glean something of the topography of the city, retrace the course of streets, piece together the ruins rising above ground and isolate important monuments and edifices. Twenty years ago barely four or five streets had been uncovered in part, six or seven acres of land had been explored and not more than six buildings brought to light. The results today are : forty roads uncovered, some forty-nine acres of ground thoroughly explored, and over one hundred buildings unearthed and restored. Ostia is now a city risen from the dead, alive with memories which speak

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of past splendours, and no longer a desolate waste of land with ghost-like ruins peering above ground here and there.

We may now affirm that the town extended along the banks of the Tiber as far as the sea and that the main thoroughfare or *decumanus* ran parallel with the river and crossed the *cardo maximus* at right angles in the Forum.

The ground-plan is that of a Roman colony, with straight regular roads and houses evenly distributed along the roadside, very similar to modern cities. In this respect Ostia must have appeared ultra modern even in imperial times, if compared, for instance, with Pompeii, where streets were narrow and houses scattered about without heed to symmetry. An ancient inscription from Ostia (C.I.L. XIV, 352), mentioning a fifth region of the city, enabled me to trace the ground-plan of the five districts into which the town was divided.

The importance of imperial Ostia, as a source of data for the life of the Great Empire, becomes more and more evident as public and private houses come to light. Temples, among public buildings, are especially interesting, particularly those dedicated to Mithras, as giving a fairly good idea of the intense religious life which developed at Ostia through countless different cults, eastern and traditional, until the advent of Christianity. Of this there remained few but unmistakable traces, mainly due to the fact that Saint Augustine and his mother Saint Monica lived there for a time.

The chief interest of the Theatre, which is one of the very few built on level ground, lies in the entrance, which is in the very centre, an uncommon feature. The number of thermal establishments stresses the Roman craze for bathing; the baths recently unearthed near the Forum were supplied with special rooms for sun-baths. Even greater interest is aroused by a hitherto unknown type of architecture, revealed by the *horrea* or public store-houses, of which there are several well-preserved examples at Ostia.

Private houses were built upon what we should call modern principles, with several storeys, a type of building which was only exploited by the Romans after they had replaced the Pompeian system of illumination through inner courtyards, with windows looking into the street.

These are a Roman invention, in consequence of which came a new type of dwelling which later developed into apartment-houses (*insula*) for the middle classes, rising side by side with the rich and noble *domus*. Each builder, naturally, planned apartments, windows, balconies and

OSTIA IN THE LIGHT OF RECENT DISCOVERIES

staircases upon designs of his own, and one of the large blocks recently unearthed is unmistakably the forerunner, in architectural style, of the great palaces of the Renaissance. What is left of decorative motives is no less interesting, for it reveals that certain patterns considered typical of Byzantine or Romanesque art are purely Roman. Thus a visit to Ostia not only serves as a reminder of the past, but also furnishes evidence upon the Latin origin of certain architectural features which it is customary to consider as modern devices for the solution of problems brought about by the present-day overcrowding of urban centres. As time goes by and work progresses we find that dead cities are not only alive because their past has been resurrected, but, chiefly, because of their living links with the present.

Historical and archaeological data supplied by Ostia is rendered all the more rich and vivid by an artistic setting of documentary and aesthetic interest; mosaics, paintings, stucco-work and terracotta wares are profusely scattered everywhere, and although mural decorations of the second and third centuries have no special style of their own, as is the case at Pompeii, their interest is due to the medley of elements inherited from earlier periods, and ingenuously harmonized by these unrefined Roman artists.

Mosaics are numerous and very original; indeed they reveal considerable study and research, especially in the case of certain geometrical patterns found in the most humble dwellings, which are unlike others seen before. The variety of motives is remarkable. Among the large pieces is the now famous one with Neptune in the baths on the *Decumanus*, dated to the Antonine period. It covers the entire floor of the entrance hall, and depicts sea-horses, tritons, nereids and other strange vividly represented creatures. The twelve signs of the Zodiac are rendered with extraordinary accuracy of detail and mastery of design. Several mosaics in the square of the Corporations are worth particular mention for their subjects and execution; they are the signs used by commercial corporations, shipping companies and other trades, laid out on the pavement, before the entrance to each shop. Their chief interest lies in the fact that, besides the trade-mark, each bears a sign indicating the nationality of the tradesman, and therefore is unique. (PLATES I-II).

Originality, however, is not a term applicable to sculpture, for in this field almost everything that has come to light at Ostia is a copy from Greek models. A certain individuality is revealed by portraits, for the Romans excelled in this art, which drew upon their keen sense

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of observation and their knowledge of technique. A portrait of Trajan from Ostia, is the best in existence of the *optimus princeps*, and that of a young princess of the Julio-Claudian family, disguised as Artemis, is also a remarkable piece of work. The large statue of Rome, placed by the people of Ostia in the Temple of Rome and Augustus in the Forum where it was worshipped, is quite characteristically Roman and unlike any other Graeco-Roman sculpture known to this day.

The art which sprang up at Ostia, therefore, was not provincial art, nor could it have been, with Rome so close at hand and Ostia's enormous wealth to draw from. It is, rather, the work of first-rate artists who were presumably quite lavishly paid by prominent citizens of the colony, and is therefore useful as furnishing elements for the study of art as expressed in the capital.

This brief survey of historical and archaeological data which Ostia offers to the student, provides indication of the far vaster interest which the city holds for anyone ready to delve deeper among its ruins in search of life and art. Ostia is not a copy of Pompeii or Herculaneum, nor a duplicate of the many Roman towns of Latin Africa from all of which little that is unknown is to be gleaned. It is, rather, a small-scale reproduction of what Rome itself really was in its hey-day, with the added charm that Ostia has preserved many typical features of the architecture and taste of that period, which have long since vanished in the imperial capital.

There are private houses, shops, store-houses, buildings for public use, sanctuaries and temples of long-forgotten eastern cults; there are mosaic paintings, stucco decorations and sculptures in most cases far better preserved than those found in Rome, and which supply missing links for the reconstruction of the history of a people.

Moreover inscriptions brought to light at Ostia supply invaluable data for the social and economic aspects of Roman daily life, and have entirely solved problems connected with the history and positions of the Roman colony on the sea. Further excavations will, no doubt, yield more interesting material, and probably reveal the existence of other monuments, and so give more documentary evidence upon the glory of Rome.

The tombs of Ostia belong to the less well preserved of the ruins but now we have been fortunate enough to find a complete necropolis not far from Ostia, and through it we are able to recognize a great part of the life of the first colony of Rome.

The recent discovery of a vast Roman necropolis at the mouth of

PLATE I



MOSAIC FLOOR WITH REPRESENTATIONS OF SHIPS, OSTIA
Ph. Anderson

PLATE II



MOSAIC FLOOR WITH REPRESENTATION OF A LIGHT-HOUSE, OSTIA

Ph. O. G. S. Crawford

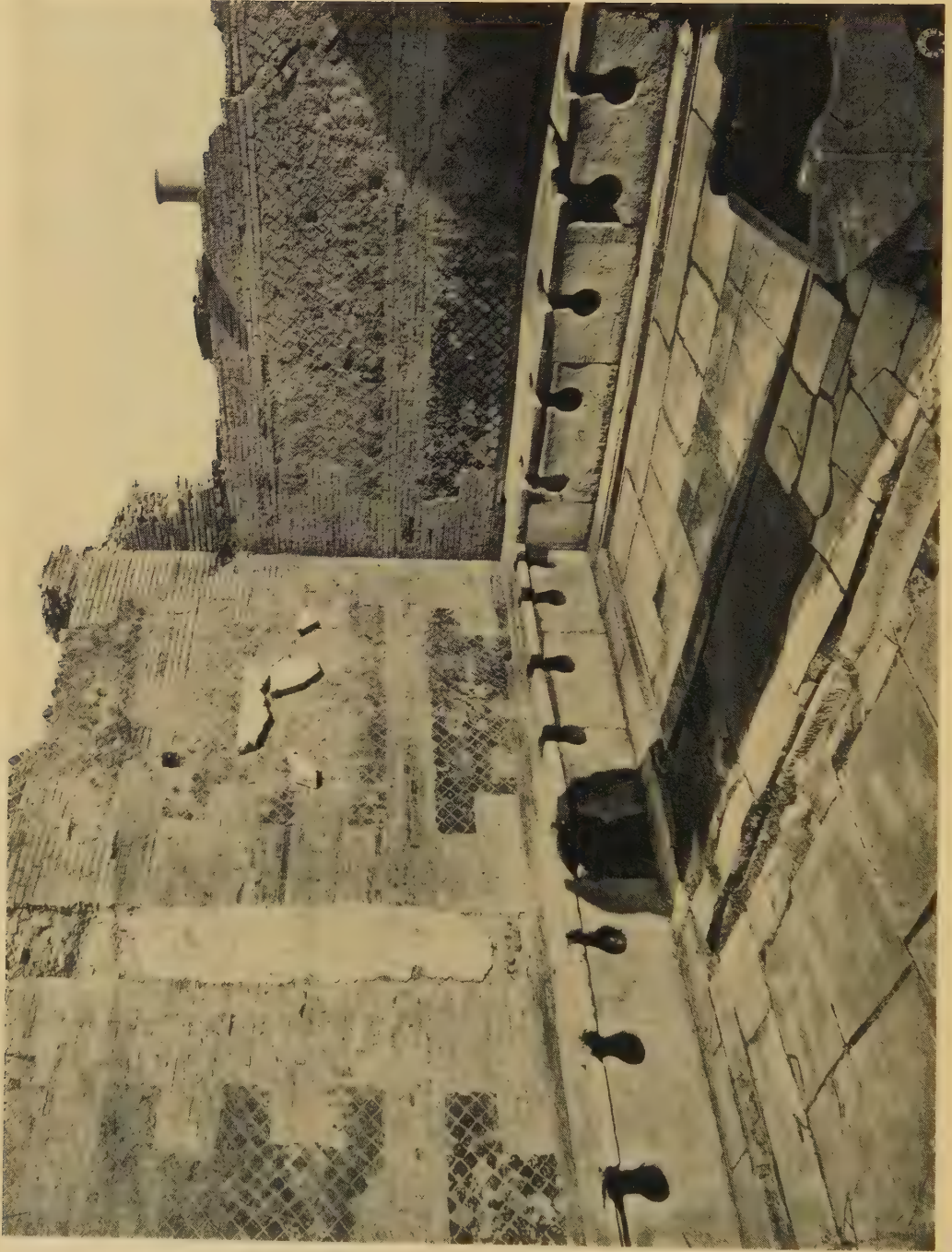
PLATE III



TOMBS AT OSTIA, SEEN FROM THE BACK

Ph. O. G. S. Crawford

PLATE IV



PUBLIC LAVATORY, OSTIA
Ph. Anderson

OSTIA IN THE LIGHT OF RECENT DISCOVERIES

the Tiber, in a triangular stretch of land known throughout history as 'Isola Sacra' (sacred island) enclosed between the course of the river, an artificial canal dug by Trajan, and the sea, is of the greatest importance to the history of Ostia, as well as to that of the later port itself, which was given the pompous name of Portus Romae at some time in the third century.

The principal feature of the necropolis is the architecture of the tombs and their variety and their decoration. The burial-ground as a whole is of the second to fourth centuries A.D., as shown by dates on the inscribed tablets found on almost every tomb with the name and the age of the deceased. Large chamber-tombs generally have decorations in relief on the architrave over the door, and are in excellent style, not unlike good Tuscan cinquecento architecture. (PLATE III). Niches in the interior were used to receive the ashes of servants and slaves, masters being buried in full-sized sarcophagi, placed along the walls. Like the vaults, these niches are decorated with mythological paintings, very primitive and obviously the work of unskilled and untrained hands. Reliefs placed outside several tombs were intended to indicate the profession of the deceased.

Sarcophagi, however, are the most remarkable of the finds. A lid of uncommon size, supporting the reclining figure of a priest of Cybele, entirely preserved, whose sacerdotal robes and symbolic ornaments are of special interest to students of ancient cults, has received universal attention. Dancing children, or cupids, sculptured in high-relief on a marble sarcophagus of a child, miraculously intact, save for the figure on the lid, are so admirably designed and executed as to recall the work of such great masters as Nicolò Pisano or Donatello. Among notable sculptures are Hellenistic marble groups representing Pan and a satyr, a child on horseback followed by a servant, statuettes of a child, and of a genius; also reliefs showing scenes from life, such as child-birth, the bleeding of a leg, a blacksmith's shop, a corn-mill and a water-carrier. A marble bust of one Caius Volcacius Myron, is in its way, as remarkable a discovery as the sarcophagus with the priest; the admirable expression of the face, which must surely have been an astonishing likeness, and the perfect technique would place this portrait in an even better period than the Antonine, to which for other reasons it must unquestionably be dated.

Is Prehistory Practical?*

by V. GORDON CHILDE

Abercromby Professor of Prehistoric Archaeology, Edinburgh University.

IN 1933 it can hardly be alleged that Prehistory is a useless study, wholly remote from and irrelevant to practical life. In one great country at least, interpretations of supposed facts of Prehistory, imperfectly apprehended by an untrained mind of undoubted genius, have revolutionized the whole structure of society. No one who has read *Mein Kampf*, or even the extracts therefrom in *The Times*, can fail to appreciate the profound effect which theories of the racial superiority of 'Aryans' have exercised on contemporary Germany. In the name of these theories men are being exiled from public life and shut up in concentration camps, books are being burned and expression of opinions stifled just as, in the name of religious ideas, they were during fifteen long centuries of darkness.

The suppression of thought during the Dark Ages was justified by an appeal to supposed revelations, vouchsafed to individuals, and the interpretations thereof. The latest onslaught on the freedom of the spirit appeals to alleged scientific facts. The justificatory documents this time actually exist in the public world—in museums and in the fields—open to every competent observer to examine, analyze and compare. But these documents can no more be profitably studied without laborious preparatory training than can the movements of stars or the behaviour of electrons. Prehistory in its several branches is just the objective and critical study of precisely those data upon which the political theories of Houston Chamberlain and Adolf Hitler purport to be built. But for the purpose of such systematic study the several sciences which compose Prehistory have had to elaborate an exact terminology, and in so doing have often defined a given term in a different way to vulgar speech and sometimes even differently to colleagues in allied disciplines. The layman may well be pardoned if he takes these technical terms at their face value, but the resultant confusion may have disastrous effects.

* Introductory lecture to the University course in Prehistoric Archaeology for 1933-4.

IS PREHISTORY PRACTICAL ?

Confusions between the several senses of 'race' and 'heredity' are particularly dangerous. 'Inheritance' is originally a legal term describing the transmission of property from father to son. The zoologists have appropriated it to a biological process and define heredity¹ as 'the resemblance between an organism and its ancestors, in so far as the resemblance is not due to similarity of environment'. 'Race', at the beginning of last century, was applied fairly indiscriminately to any group of men or other animals distinguished by common peculiarities, whether of bodily form or of speech or even religion; it was seriously debated whether language were not the best criterion of race.² Zoologists restrict the term to groups possessing common hereditary qualities in the biologist's sense, and stock-breeders and physical anthropologists have tried to follow them.

Now what interests us chiefly in the case of the lower animals and particularly domestic ones are the physical differences between breeds or races—differences in the quantity and quality of their wool or in egg-laying capacity. The breeder and the experimental zoologist have shown that such differences are not due to any deliberate effort on the part of the individual sheep or hen, but to differences in the germ-plasm transmitted in the stock to which the creature belongs. To 'improve' your flock or your poultry all you can do is to select and couple animals possessing the qualities you regard as desirable, in the confident belief that these qualities will reappear in the offspring. 'Racial hygiene'³ is the portentous name given to an attempt to apply the same principles by analogy to man. But is the analogy not perhaps a false one? Are the qualities valuable in humanity strictly analogous to those valued by man in poultry? And are the same methods of propagation applicable?

Man is undoubtedly an animal, descended from some ape-like creature. But *qua* man he is distinguished physically from all other animals by possessing a very complex brain and nervous system, rendering possible infinitely delicate adjustments between the sensory organs and the muscles. He can make tools with his hands, he can utter

¹ *Encyclopaedia Britannica*, last ed., s.v. HEREDITY.

² See T. Simar, *Étude critique de la doctrine des races au XVIII^e siècle et son expansion au XIX^e*, Brussels, 1922.

³ To be distinguished from eugenics in so far as the latter aims at weeding out specific hereditary defects and pathological conditions which can be readily and accurately diagnosed, and the heredity of which can be precisely determined since the defects in question are dependent on single genes.

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articulate sounds. As a consequence he is in quite a different position from all other animals. As a protection against cold or enemies the other animals have to rely upon the fur or the horns conferred upon them by heredity (in the biological sense). Man alone can kindle fire and manufacture clothes to keep him warm, can fabricate weapons for his defence. These things—fire, clothes, weapons—are part of man's 'culture', external to his body, to be made and discarded at will. He only acquires them after birth, whereas a tendency to grow fur and claws is innate in a cat which cannot discard them at will. Only by mutations in the germ-plasm could a better equipped animal arise, which as the result of processes of natural selection might become after many generations the parent of a new race or even species.

All animals, including man, come into the world with their nervous systems attuned to react in specific ways to external conditions. Most animals, again including men, can learn by experience to modify such so-called instinctive reactions. But neither man nor any other animal can hand on to his offspring by heredity the newly learned modifications. Acquired characteristics are not inherited.⁴ But certain animals can by example train their own offspring to react in the manner they have found advantageous. Only man, owing to his power of articulate speech and to the prolongation of infancy, can transmit to his descendants integrally what he has learned by experience in his own lifetime. A human child does not therefore start adult life at the same point as its parents but already armed with some of the fruits of their experience. In other words the child's equipment inherited from his parents in the biological sense has been enlarged by instruction or social heredity, by acquired ancestral experience. Human capacities are thus being augmented from generation to generation by instruction in skill acquired in the past.

Moreover, by speech men are enabled not only to pass on to their children the results of their own individual experience—they can communicate them to one another. One can tell his fellows what he has seen and done and can learn in return the experiences and inventions of his neighbour. Put briefly—experience can be pooled. There thus arises a collective tradition embodying more or less the pooled experience of mankind.

This tradition embraces *inter alia* the various ways of acting and

⁴ Prof. Macdougall's rats, the most recent experimental supports of Lamarckianism, seemed less convincing after a statistical study by Prof. Crew at the British Association meeting in 1933.

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making things that the component individuals of the species have discovered or invented. Material culture is just the concrete embodiment of this tradition, and the proper subject-matter of archaeology. For perhaps half a million years man has been leaving on the surface of the globe the products of his hands, the concrete expressions of his intelligence, the particular embodiments of his traditional arts and crafts. The archaeologist studies and classifies these. He can then compare the changes in man's material culture—his social heritage—with the changes in his physical structure—his biological heritage.

A reasonably clear record of the physical characters of our species extends over only some 20,000 years. During that time the physical structure of man—at least his skeleton, many of his muscles and such part of his brain as leaves impressions on the walls of the skull—has undergone only relatively minor modifications. In the same period his material equipment has been revolutionized, his control over his environment incredibly enlarged. Twenty-five millennia ago all men of whom we have any knowledge were just *gatherers*, living on the wild fruits and game native to their territory, dwelling in caves or rude shelters and equipped with a strictly limited range of tools and weapons made exclusively of stone, bone, horn and wood. Today we are nourished by plants and animals, deliberately cultivated and bred on artificially irrigated and fertilized lands and conveyed to us from great distances with incredible speed ; we dwell in huge cities drained and lighted by electricity and we control complex machines of metal that can exert a power excelling that of thousands of human bodies.

From the standpoint of geology or zoology the time occupied by this transformation is trifling ; but it is a transformation in culture, not in hereditary physical structure ; in external equipment, not in the germ-plasm of the species. In other words man's exceptionally rapid 'improvement' is due to that accumulation of experience and tradition rendered possible by speech, and subsequently accelerated by writing, not to accumulated mutations in his biological make-up. What is true of material culture, which the archaeologist especially studies, applies equally to so-called spiritual traits such as Science or Art. If he took a wide enough view, the historian could easily show how the achievements of a Newton or an Einstein rested upon a substructure built up laboriously by 5000 years of collective effort ; he could trace the tradition of mathematical techniques down from the remote hunter who perhaps first distinguished the notches on his tally as abstract numbers, through the Babylonian scribes who for the administration of

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vast temple-revenues devised the processes termed multiplication and division, the handling of fractions, the extraction of square roots and the determination of areas, to the Greeks who generalized the rules used by their oriental precursors (such as the Theorem of Pythagoras) and so to the calculus and relativity.

Progress in the case of mankind has accordingly been not so much an 'improvement' in the bodily structure that each man inherits from his parents, as a steady accumulation of the cultural capital, a gradual enlargement of the traditional experience that a man acquires from his social environment after birth. This fact prompts the question, whether the aims of the stock-breeder are strictly applicable to humanity at all?

But even if they are, it may be questioned how far the stock-breeder's methods are applicable to mankind. All 'modern' men, despite their well marked physical differences, belong to a single species and can interbreed freely. From the last Ice Age onwards the variety of skeletal types found in Europe suggests the possibility of extensive interbreeding, at least in our continent. A study of the blood-groups, recognized only since the war, is held to prove that such interbreeding has actually taken place, and that the populations of Europe, North Africa and Hither Asia at least are by now thoroughly mixed.⁵ Now the mechanism of biological inheritance and the statistical rules governing the hereditary transmission of characters in cases of interbreeding, though outlined by Mendel in 1866, have only been worked out in detail within the last thirty years and are still little known outside biological laboratories and institutes. The hereditary constitution of any organism is believed to be determined by factors, technically termed 'genes', received in pairs from its parents at birth, each parent contributing one to each pair.⁶ Each gene is regarded as predisposing the organism to develop a certain hereditary trait. Thus there would be a gene (probably there are several) for long-headedness. In crosses between different varieties each pair of genes might represent a pair of alternative lines of development, but only one of the alternatives is realized in each concrete case. The offspring, however, carries both alternatives in his germ-plasm, and may transmit either to his descendants. Which alternative is to be realized is determined by rules of

⁵ Hogben, 1931, p. 126; cf. Ruggles-Gates, 1929, p. 295. 'There is no such thing as a pure or homozygous race of mankind'.

⁶ Morgan, *Theory of the Gene*, Yale, 1928; summaries in Ruggles-Gates and in Baur-Fischer-Lenz.

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'dominance' that can be discovered by statistical analysis of observed cases. For instance in a cross between a long-head and a round-head (assuming a single gene for head-form) the offspring would not be betwixt-and-between but round-headed or long-headed. The available evidence suggests that he would be probably round-headed as this gene is likely to be dominant, but he might none the less have long-headed children.

Furthermore the several hereditary traits or genes may be transmitted separately from parent to children. Stature, complexion and head-form are all determined by distinct genes (more probably by a large number of distinct genes). We have all met tall blonde long-heads, tall dark long-heads, short blonde long-heads and short dark long-heads that illustrate this sort of separate or particulate inheritance. Yet nineteenth-century text-books take the first and last combinations of characters as distinctive of the 'Nordic' and 'Mediterranean' races respectively.

Statistical studies of a large number of individuals have established very clearly the rules of dominance in fruit-flies and other quick-breeding organisms, and also the probabilities that groups of genes will be transmitted together in crossing. In the case of men, whose pedigrees are hard to ascertain, who breed slowly and sparingly and whose hereditary mechanism is exceedingly complicated, very little is yet known about the rules of dominance and hardly anything about the linkage of genes.⁷ Even if it be statistically probable that a tall long-head will be also blonde, that gives us no certainty as yet that a tall long-headed skeleton 5000 years old also belonged to a blonde man. And, Karl Pearson⁸ writes 'When we come to associate mental and bodily characters we find no correlation whatever of prognostic value'.

That statement should brand anyone who talks of 'racial mentality' as a charlatan. And in fact the researches conducted in biological laboratories have robbed the naive nineteenth-century conceptions of even physical race of most of their scientific value,

⁷ Baur, p. 67 : 'Difference in the shape of the skull, the structure of the brain . . . in a word the numberless morphological and physiological distinctions between the various races of man depend in each case upon very numerous heredity-factors, with the result that as yet we know little about the course of their inheritance'. Fischer, pp. 119 and 151, and Ruggles-Gates, pp. 42 and 323, point out the alterations in skull-form and stature produced by non-hereditary post-natal factors. Such alterations cannot be distinguished from hereditary traits in individual cases, though in large populations they might be discounted statistically.

⁸ *Annals of Eugenics*, 1926, 1, 405.

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though the results of those researches have seldom penetrated as yet into the anatomical galleries of the physical anthropologists. Until the workings of heredity in man have been far more exhaustively and dispassionately studied, and the idea of race re-established on a truly scientific basis, it is surely rash to give statutory sanction to nostrums based on false analogies between men and poultry.

In the light of the foregoing summary, it should be easy to dispel the popular confusion between race and culture or race and language—a confusion involved for instance in the phrase ‘Aryan race’, and in legislation using that expression. As there are varieties in the physical breeds of men—races in some sense—so there are varieties in human culture. The process of pooling experience, previously described as the basis of human progress, has not been proceeding evenly at all times and places. Mankind is dispersed over the whole surface of the globe and is divided into discrete groups by forests, mountains, deserts and seas—barriers to intercourse which have been very largely annihilated in the last fifty years by the steamship, the aeroplane, telephony and wireless. Before these inventions human groups were often very largely isolated, communication between them was difficult and sporadic, accumulated experience was very unevenly shared.

For the first 15,000 years (*i.e.* after say 25,000 B.C.) for which Pre-history has anything like adequate data, mankind probably lived in quite small communities, largely, but never perhaps entirely, isolated from one another. And such isolation has continued throughout history, though it has been increasingly broken down as a result of the cultural progress of the last 6,000 years. Each community tended under these conditions to build up its own peculiar tradition and material culture, based upon its own historically conditioned collective experience and its own geographically conditioned needs. And at the same time the conventional meanings given to the many groups of articulate sounds came to differ from community to community, producing the babel of tongues which has helped to accentuate geographical isolation.

The progress of linguistic divergence is only directly observable at a very late stage. But in the case of material culture, the divergence of tradition, in so far as it found concrete expression, is traceable by the prehistoric archaeologist. We can recognize groups of man-made objects—implements, ornaments, ruins of dwellings—belonging to the same general age but normally collected from distinct, but not necessarily remote, sites that differ from one another arbitrarily in respect of method of manufacture, material, shape and kind. Such differences

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clearly reflect differences in traditions of workmanship, of hunting, of fighting, of fashion in dress and so on. They are differences in the culture of distinct groups of men. Very often the bodies, or at least the skeletons, of the people who made and used these objects can also be studied, since the objects in question were often buried with their owners. But in many instances the skeletons, accompanied by the same sorts of implements, weapons and ornaments, belong to very different types ; they cannot possibly be classified as belonging to the same race or physical stock. The so-called ' Nordic culture ' of Europe in the third millennium B.C. is a case in point, since extreme long-heads and extreme short-heads, together with a wide range of intermediate types, are found accompanied by identical pots, axes, and beads in the same grave.⁹ In other words, in the prehistoric past as obviously today, culture was independent of physical race, was not a matter of biological heredity but of social tradition.

Ignorance of this fact, or rather the careless use of the word race as coloured by biological theory for the prehistoric group distinguished by a peculiar culture, has naturally reinforced the false analogy between men and poultry in misleading the ' racial-hygienists ' and their political interpreters. If we replace the word ' race ' in this context by ' people ', we shall more easily avoid such confusions. After all, we speak of the British people as the group of conspicuously varied physical types who enjoy British traditions, institutions and culture.

Prehistoric archaeology is largely devoted to isolating such cultural groups or peoples, tracing their differentiation, wanderings and interactions. But the distinction of cultural groups and the differentiation of peoples is far from being the most significant or attractive thread running through Prehistory. Over against the processes of divergent development leading to the separation of distinct peoples—and confusion—can be traced no less clearly a process of convergence or, more strictly, diffusion. At least in the Old World the peoples accessible to archaeological study were constantly interchanging material objects, ideas and inventions. Such intercourse is conclusively attested in the archaeological record—least ambiguously of course in the wide diffusion of substances like amazonite, amber, callaïs, lapis lazuli, shells or tin, far beyond the restricted areas where they occur in nature. This diffusion of substances is only the grossest concrete expression of the diffusion of ideas, in fact of that process of pooling experience to which reference was made earlier.

⁹ cf. *JRAL.*, LXI, 342, n. 3.

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It betokens the creation of a capital of knowledge and equipment, shared (albeit unevenly) by all peoples, to which all have been making their own collective contributions. What we call Civilization is the product of this collective tradition, transcending all national frontiers. Archaeology and written history agree that the principal contributions were made first by the peoples of the Ancient Orient—of Egypt, Sumer and the Indus valley—then by the Greeks and their Minoan forerunners, later by the Romans ; but even the barbarian Celts and Germans, as Prof. Bury¹⁰ termed our more immediate ancestors, made contributions of their own.

European Prehistory alone can enable us justly to appreciate what our national ancestors did contribute to our cultural heritage. In an official invitation received by the writer to the opening of a certain museum last June the organizers explained that they had gathered together a representative collection of prehistoric Teutonic art and industry and 'hoped thereby to establish that Germanic art was the highest art of all time'. In other words handmade clay-pots, rather poorly baked and incised, not painted, are to be exalted over Attic vases and Chinese porcelains ; the barbaric carvings on a pirate galley must excel the sculptures of the Parthenon ! That is hardly the verdict of scientific Prehistory.

Objectively studied Prehistory will rather emphasize how much more precious and vital is the growth of the common tradition that leads up to civilization than the idiosyncrasies and divagations of any separate groups, however brilliant. To attempt to cut oneself or one's community off from this lifegiving tradition is to commit spiritual suicide. To admit as good only what is Celtic, or Germanic or Indian, as exclusive nationalism would demand, is unscientific and unhistorical.

BIBLIOGRAPHICAL NOTE

It is probably impossible to approach all the problems discussed above in a purely objective manner. Most of the authors cited in the footnotes are likely, as is the present writer, to be unconsciously biassed by prejudices and passions that ought to be eliminated in scientific work. Of the works on heredity cited Baur, Fischer and Lenz, *Human Heredity* 1931, is a translation of a German text-book strongly in favour of 'racial-hygiene'. Ruggles-Gates, *Heredity in Man* 1929, is slightly inclined in the same direction. Hogben, *Genetic Principles in Medicine and Social Science* 1931, belongs emphatically to the opposite school.

¹⁰ *Cambridge Ancient History*, vol. I (2nd ed., 1924), preface to 1st ed., page v.

Ancient Glass

by D. B. HARDEN

Ashmolean Museum, Oxford

THE circumstances of the first production of glass are shrouded in mystery. The ancient authors give us little or no trustworthy information on the subject. Pliny the Elder,¹ our chief authority, tells us a strange tale which is credible neither from the archaeological nor from the technical standpoint. He says that a party of Phoenician saltpetre-merchants landed by the mouth of the river Belus in Phoenicia. They set about lighting a fire to cook a meal, and for want of stones on the beach they took some blocks of saltpetre from their cargo to rest their kettle on. The heat of the fire fused the sand and the saltpetre into a vitreous mass. The story is probably a pure myth. From a technical point of view it is extremely doubtful if an open wood fire on a beach would be sufficient to fuse the sand and the saltpetre; while from the archaeological standpoint it is certain that glass was known long before the Phoenicians were trading in the Mediterranean. The whole myth is based on the fact that in Pliny's own time—the 1st century A.D.—and for many centuries before, the sands of the Belus were widely used for glass-production. No author anterior in date to Pliny tells us anything at all about the origin of glass; later authors, even as recently as the middle of the 19th century, for the most part repeat blindly Pliny's story.

Let us see what is the evidence of archaeology.

Glaze or vitreous paste as a coating for stone and clay was known and widely used in Egypt and Mesopotamia from the 4th millennium B.C. onwards. But despite this early knowledge of the use and value of glaze, glass objects for which an earlier date than the 16th century B.C. can even be claimed, much less proved, are few and far between. Some beads of the 11th Egyptian dynasty—the end of the 3rd millennium B.C.—are the only really certain examples.

¹ Pliny, N.H. xxxvi, 191.

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The first dated piece of glass is a bead in the Ashmolean Museum at Oxford which bears in hieroglyphs the name of Amenhotep I, the second king of the 18th Egyptian dynasty (1559-39 B.C.) and may, though it need not, be contemporary with that king. Not long after come two glass vases bearing the name of Thothmes III of the same dynasty, preserved, one in the British Museum (FIG. 1) and the other in Munich. But it is at the heretic Akhenaten's city of el-Amarna, at the end of the dynasty, about 1370-60 B.C., that glass vessels are first found in any quantity.

These earliest glasses were not blown. They were modelled on a sand-core, a much more laborious process. Professor Petrie, while digging at el-Amarna in 1891, was lucky enough to find the remains of several glass-workshops. The finding of crucibles in which the metal was fused, as well as fragments of the metal in various stages of workmanship, enabled him to decipher the processes involved.²

After the glass batch³ had been fused in clay crucibles and allowed to cool, the defective parts were chipped off and discarded and lumps of the metal³ were reheated so that it might be rolled out into rods. A core of sand was affixed to a tapering metal rod, and the vessel was modelled by winding the glass rods spirally round this core. The surface was then smoothed by marvering or rolling the glass on a smooth surface. If decoration was added to the glass, as it usually was, it consisted of threads of coloured glass trailed on the vessel and afterwards marvered in flush with the surface. Festoon effects were produced by combing the threads one way only; zigzags and herring-bones by combing in two directions (FIG. 2). When the vase was complete the metal rod and the core of sand were removed; examples of this early glass almost always show a coating of sand on their inner surface, an indubitable proof of the technique employed.

This process of manufacture was obviously slow and troublesome and at the same time ill fitted to the production of large vessels. Consequently we need not be surprised that glass vases were still comparatively rare and costly, and that they consist entirely of small goblets and scent or unguent bottles. Glass was still an article of luxury, comparable in price and rarity to gold and silver, as the author

² W. M. F. Petrie, *Tell el Amarna*, pp. 25 ff.

³ Glass-workers use the term 'batch' to denote the raw ingredients of the glass before fusing, and the term 'metal' to denote the unworked glass after the fusion of the raw materials.

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of the Book of Job (xxviii, 17) suggests when he ranks glass as the equal of gold and precious stones.

There was no change in the technique of glass-manufacture or in the type of vessel produced until, probably, late Ptolemaic times (1st century B.C.). About that time, in Egypt, the process of pressing into a mould as distinct from modelling on a sand-core came into vogue (though the older method was not finally discarded till much later), and this brought in its train new shapes and new decorative ideas. Bowls and dishes for table use could now be made. As the art was not fully developed until the 1st century A.D., it will be treated more fully below (p. 424).

The next development in the glass industry was the most revolutionary one ever made in the history of glassware, the invention of glass-blowing. Most unfortunately we do not know for certain either the date or the place of that invention, but we can pin both down within narrow limits. The discovery occurred either in Egypt or in Syria, and probably just before the beginning of the Christian Era.⁴

Pliny, who lived and wrote when the new process was spreading all over the Roman Empire, and who actually pretends to give a full account of glass and its working, says nothing about the time and place of this discovery. No blown glass has been found in Ptolemaic levels in Egypt or in Hellenistic tombs in Cyprus or Syria. On the other hand blown glass has been found in Augustan levels in many parts of the Roman world. These facts fix the time of the discovery. The place is more uncertain. It may be assumed that blowing into a mould was anterior to free blowing inasmuch as pressing glass into a mould was already a favourite technique. In Syria mould-blown glass with patterns is common in Augustan times, and moreover, the makers were so proud of their work that they often signed it (p. 424 below). Is it unwarrantable to conclude that these were the men who actually invented the process of blowing glass?

The new technique once started, its advantages were soon understood. The old techniques were tedious and only admitted of the manufacture of a limited number of shapes and sizes of vessel. The

⁴ Not long ago even archaeologists of repute maintained that glass-blowing was known in the time of the 12th Egyptian dynasty, if not earlier. They based this theory on the evidence of several paintings depicting artisans blowing through rods before a furnace, which are found in Egyptian tombs of various dates. This theory was disproved by Professor Griffith (*Beni Hasan*, iv, p. 6, pl. 20), who rightly identified the people as metal-workers and not glass-blowers.

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blowing of glass, on the other hand, is even superior to pottery-making in the speed with which vessels can be turned out ; while at the same time a very little practice and experience enables the worker to turn out an infinite variety of shapes and sizes. At last, then, glass could rival pottery in its popularity, and glass vases became as cheap as, if not cheaper than, their pottery equivalents.

But blown glass has another great advantage over pottery—lightness of weight—and this caused it to be adopted for the transport of fluids such as wine and oil from one end of the Empire to the other ; for, given suitable packing, there is no reason why glass should be any more liable to breakage during transit, even by sea, than is pottery. Glass bottles and unguent flasks of Syrian and Egyptian manufacture have been found in quantities in South Russia, Gaul, and Germany, and indeed in every part of the then known world. They were packed, like the modern Chianti and Eau de Cologne flasks, in plaited straw covers. An interesting mosaic from El Djem in Tunisia^{4a} shows a wine-bottle with such a cover, and actual examples of glass in covers have been found in Egypt.

After it had been invented in the East, the manufacture of ordinary blown glass rapidly spread westwards and factories had been established in Italy and South Gaul, if not further afield, by about A.D. 50. These factories were no doubt staffed at the start by migrating eastern workmen, but it cannot have taken long for western artisans to adopt the new technique from their eastern rivals. From South Gaul and Italy the centre of the western industry moved northwards in the 2nd century, and after that date the factories of North Gaul and the Rhineland were the outstanding competitors of Syria and Alexandria. That blown glass was made in Britain during the Roman occupation is probable. Supposed glass ovens of Roman date have been found at Wilderspool near Warrington,⁵ and others quite recently by Mr Donald Atkinson at Caistor-by-Norwich.⁶ And indeed nothing is more natural than that enterprising artisans should have migrated hither with their trade-secrets from the Amiens district.

A curious thing to notice is that, despite the localization of the industry in many parts of the Empire, the same fashions in shape and

^{4a} Musées de l'Algérie et de la Tunisie xv, Mus. Alaoui, Suppl. 1 (1910) pl. xv, 6, p. 22.

⁵ T. May, *Warrington's Roman Remains*, pp. 37 ff.

⁶ *Trans. Norfolk and Norwich Arch. Soc.* 1929, xxiv, 108-12.

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technique arise almost simultaneously in each quarter. This can only be accounted for by assuming a constant coming and going of workers from one part of the Empire to another. Most of the movement was probably in the direction of east to west, and there was probably constant migration of Syrian and Alexandrian workers to Gaul and Germany. But it is not impossible that in their turn the Gallic and German workshops inaugurated techniques which spread eastwards.

In consequence of this continual inter-communication and of the swift spread of new fashions and techniques it is not always easy, on western sites, to distinguish imported eastern glass from the local ware. Colour and fabric help to some extent in the case of the common wares. As regards common glass, the Syrian usually has a blue-green tint and is fairly light and thin. Egyptian glass tends to be sea-green or dull green, and to be of heavier texture. Gallic and Rhenish is more like the Egyptian than the Syrian in colour and texture, but usually has a brighter green colour and is not so heavy or thick-walled as the Egyptian. In the case of the better-class wares and the decorated glass certain small differences in shape and in treatment of decorative motives are usually present to help us.

Close dating of Roman glass is by no means an easy task. Most of the types and techniques were extremely long-lived, and in the present state of our knowledge it is often unsafe to hazard a date within a century, let alone a decade. It is perhaps best to adopt Morin-Jean's classification, elaborated in his book on Gallo-Roman glass,⁷ and to divide the glass into two groups, an early one, dating from the 1st and 2nd centuries A.D., and a late one dating from the 3rd to the 5th century. Such a division is arbitrary, of course, for there was no violent upheaval in glass-working round about the year 200, but it was during the late 2nd and early 3rd centuries that Roman glass-working reached its zenith, owing to the introduction of several new processes of technique and decoration, and it is therefore convenient to adopt this point as a dividing line.

The first of the two periods shows the gradual mastering of technical processes, and the development of the industry. The second shows at first the art of glass-making at the highest point it reached in antiquity, and then, later, a gradual decline in skill and attainment which is typical of the whole field of art and industry during the 4th and 5th centuries A.D.

It will perhaps prove interesting to give a short account of the

⁷ Morin-Jean, *La verrerie en Gaule sous l'empire romain*, 1913.

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chief shapes, varieties, and decorative processes that are typical of each of these periods.

In the first period the shapes are, as one might expect, simple and plain. FIG. 3 shows a typical group of common green blown glass of the 1st and 2nd centuries A.D. The examples all come from eastern sites but the shapes are similar to those of western fabric. The rims are either left plain, or are rounded in a flame or folded inwards. The bodies are usually simple bulbs, and only slightly fashioned with a modelling tool after being blown. Bottoms are concave, and elaborate base-rings and foot-stands are rare. Handles, too, are of elementary type.

Though plain-blowing was by far the most frequent, as it allowed of so many more forms and left so much more play to the inventiveness of the glass-worker, two other varieties of manufacture were prevalent during this period—pressing into a mould, and blowing into a mould. Mould-pressing was confined to bowls and dishes. FIG. 4 shows a group of vases, one monochrome and the rest polychrome, made by this process. They are, as one would expect, highly symmetrical, and they were also finely polished, as a rule, after being moulded. The glass is either colourless, monochrome (fine dark green, blue, or brown colours being predominant), or polychrome, made in one of the several varieties of the millefiori or mosaic technique.⁸ Most of these fine bowls were doubtless made in Alexandria and exported thence to Italy and the west, but there is some evidence, in the shape of ingots of millefiori glass that have been found on western sites, that such bowls may have been made in the west also.

Mould-blowing admits of more variation in shape, for, if the moulded decoration be confined to the body and base and the mould be in two or more parts, flasks and bottles may be manufactured as well as bowls and dishes. As has been mentioned (p. 421), there was a group of Syrian (chiefly Sidonian) workers active during the Augustan and Tiberian periods (early 1st century A.D.) who made fine glasses by this process. FIG. 7 shows a typical piece. The two best known workers are Ennion and Artas. They signed with some such formula as APTAC CEIΔON, ENNION ΕΠΟΙHCEN or the like. It is considered probable that Artas and others of these workers migrated to the west and worked

⁸ To make this bundles of glass rods of varying colours were bound and fused together into one stick, and then the stick was cut into cross-sections and the sections laid in a mould and joined together by fusion. The result was a mosaic-pattern of sections from one or more rods.

PLATE I



FIG. 1. JUG, TURQUOISE BLUE, INSCRIBED WITH NAME OF THOTHMES III. INSCRIPTION AND DECORATION IN YELLOW PAINT 18TH DYNASTY. (See p. 420)
(British Museum)



FIG. 2. OINOCHOE AND ALABASTRON OF SAND-CORE GLASS. 26TH DYNASTY
(See p. 420)
(British Museum)



FIG. 3. ORDINARY WARE, GREEN, FROM KERCH IN THE CRIMEA. 1-2ND CENT. A.D. (See p. 424)
(Ashmolean Museum, Oxford)

PLATE II



FIG. 4. MOULD-PRESSED BOWLS: Nos. 1-3, POLYCHROME; No. 4, MONOCHROME
1ST CENT. B.C.—1ST CENT. A.D. (See p. 424)
(British Museum)



FIG. 5. ORDINARY WARE, CHIEFLY GREENISH AND YELLOWISH, FROM SYRIA. 3-5TH CENT. A.D. (See p. 425)
(Ashmolean Museum, Oxford)

PLATE III



FIG. 8a. BOWL, COLOURLESS, WITH CUT DESIGN OF ARTEMIS
SURPRISED BY ACTAEON, FROM MERSEBURG, SAXONY
2ND CENT. A.D. (See p. 425)
(British Museum)



FIG. 8b. DESIGN (FROM A SKETCH) ON UNDER SIDE OF
POWELL, STONING IN 9.



FIG. 6. BOWL, GREENISH, MOULD-BLOWN, WITH CIRCUS
SCENES, FROM COLCHESTER. 1-2ND CENT. A.D. (See p. 425)
(British Museum)



FIG. 7. CUP, GREEN, MOULD-BLOWN SIDONIAN FABRIC, SIGNED
(IN UPPER PIECE) BY EUNION AUGUSTAN PERIOD. (See p. 424)

PLATE IV



FIG. 9. GOBLET, COLOURLESS, WITH CUT DESIGN OF VINE-SPRAYS AND GRAPE-CLUSTERS. VOM RATH COLLECTION. EARLY 3RD CENT. A.D.
(*Antiquarium, Berlin*)



FIG. 10. CYLINDRICAL BOTTLE, YELLOWISH, WITH SCRATCHED GEOMETRICAL PATTERN, FROM COLOGNE. 4TH CENT. A.D.
(*Wallraf-Richartz Museum, Cologne*)



FIG. 11. TWO-HANDLED FLASK, 'COLOURLESS', WITH POLYCHROME 'SNAKE-THREADS' EARLY 3RD CENT. A.D.
(*British Museum*)



FIG. 12. BOWL, GREEN, WITH BLUE BLOBS 3-4TH CENT. A.D.
(*British Museum*)

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there⁹ : at any rate it was not long before mould-blown glasses were being made in the west. Apart from simple forms, such as glasses in the shape of fruits, bivalve shells, and the like, two very interesting types of figured bowls were made during the late 1st and the 2nd century A.D., probably in Gaul.¹⁰ These were the famous bowls bearing scenes of chariot-racing (FIG. 6) and gladiatorial combats.

Mention has already been made of colourless glass. It was not until the 2nd century A.D. that the glass-workers discovered that a correct quantity of manganese, if added to the batch, would neutralize the greenish colour imparted to the metal by its iron content, and would produce colourless glass. This discovery was probably due to Alexandrian workers. At any rate it was in Egypt during the 2nd century that colourless glass first became common. Both mould-pressed and plain-blown vases were then made in Alexandria and exported examples are found all over the Empire. At the same time glass-makers borrowed from gem-cutters the method of decorating vases by cutting or grinding them on a wheel when cold. This technique was used frequently for decorating bowls and beakers of colourless ware, and there resulted from this combination of ware and decoration some of the finest products of ancient glass-making.

FIG. 8A is an example, a plain-blown bowl found at Merseburg in Saxony bearing a cut design depicting the legend of Actaeon and Artemis. The design on the under side of the same bowl, reproduced from a sketch, may be seen in FIG. 8B.

Other techniques of decoration besides cutting, for instance trailed-on threads, added blobs, pinches, and painted patterns, also began to be elaborated during the 2nd century A.D., but, as their full development only came during the succeeding century, they will be more fully discussed (p. 426).

In the second period, 3rd to 5th century A.D., the prevalent shapes are, on the whole, more complex, as may be seen from a glance at FIG. 5, which shows a group of typical glass, chiefly greenish or yellowish, of the period. The pieces illustrated are all from Syrian sites, but Gallic and Rhenish vases of the period are built to a large extent on the same lines, and followed a parallel course of development. We find that by this time rims are often curved and folded in graceful lines ; bodies are more decorated ; and the bottoms of vases, especially bowls and

⁹ A Kisa, *Das Glas im Altertume*, p. 923.

¹⁰ Kisa, *op. cit.*, pp. 726 ff.

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cups, are enriched by complicated stems or base-rings of various sorts. Handles are also both commoner and more elaborate.

By the beginning of this period glass-makers had developed such skill in working the material by means of plain-blowing, and they had perfected so many diverse methods of decorating plain-blown vases, that that technique almost completely ousted the other two processes, mould-pressing and mould-blowing. Millefiori pressed bowls are now very rare, and though the technique probably never died out completely in the east, it was not common again until the Middle Ages, when it was revived by the Venetians. Similarly mould-blowing, though it was not entirely given up, was only used for common rectangular wine-bottles and for small flasks and bottles.

Of the decorative processes employed during this second phase of Roman glassware, the most important are cutting and the trailing on of drawn glass. The use of cutting, after it had been invented in Alexandria during the 2nd century, spread not only to Syria but also to the western factories, and during the 3rd and 4th centuries a continuous stream of cut glass was poured forth. During the 3rd century the cutting was still quite good and well polished, and vessels such as those in FIG. 9 were produced; later the mastery of the technique degenerated and by the 4th century scratchy, unpolished work like that of FIG. 10 was the rule.

The trailing-on of threads for decorative purposes had been employed by glass-workers from 18th dynasty times onward and it was used by the glass-blowers of the 1st century A.D. for decorating flasks with spiral threads. By the 3rd century workers had become more daring, and they began to make elaborate patterns with trailed-on glass. The best known and most showy pieces are the so-called snake-thread glasses made in Cologne during the early 3rd century. FIG. 11 shows a typical instance. The pattern is in several colours and it looks like so many snakes coiled round the glass, one end of each coil being roughly fashioned to resemble a snake's head.

Closely allied to the trailing-on of threads is the decoration of glass by means of blobs or knops of glass usually of different colour to that of the vessel (FIG. 12). These were meant in the first instance to imitate settings of precious stones on metal vases. The technique attained its greatest popularity during the 4th century. Pinching, ribbing, and indenting are other favourite techniques of the period. Painting with enamel was always rare in Roman times, but some fine examples of the art are known, especially one or two fragments found in Egypt, and

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a group of bowls found, strangely enough, for the most part in Scandinavia.¹¹ Its prime was probably the 3rd century A.D.

Finally a system of decoration that became very prevalent on church glasses of the 4th and 5th centuries A.D. deserves mention. It consists of gold-leaf interlaid between two plain pieces of glass, and was used to decorate the bases of bowls. These bowls were obviously for ecclesiastical use, for the decoration usually consists of roundels enclosing the heads of saints or scenes from biblical stories.

We have now reviewed the history of glassware from its beginnings to the end of the Roman period. The glass of dynastic Egyptian and Ptolemaic times was a luxury-article produced in comparatively small quantities and at great labour and cost, mostly for the use of traders in unguents and scents. Glass of Roman times, apart from a few special luxury-types such as millefiori and cut-glass bowls, was one of the staple objects of everyday use for rich and poor alike. It was mass-produced at a very small cost, and bid fair even from the outset of the imperial period to oust metal and pottery vessels from many of their household uses. The trade flourished so much, and glass-workers became so numerous, that it was worth while for emperors in need of money to impose a tax on them. Alexander Severus did so in the early 3rd century, and we hear of Aurelian reimposing the tax later in the same century. Constantine in the early 4th century found himself able to repeal it, and that was probably the cause of the greatly increased production of glass all over the Empire which characterizes the Constantinian period.

Both the accomplishments and the limitations of the Roman glass-maker are evident. The glass of the period cannot rival its modern counterparts in symmetry of shape, in precision of chemical composition, or in purity of texture and in freedom from flaws and bubbles. This is but natural when we consider the enormous advantages enjoyed by the modern mechanized industry. The points wherein it could and did rival modern products are its artistry and its feeling for form and colour. It never overloads its decoration and it rarely if ever attempts freak forms or *tours de force* which can have but one object, that of showing off the maker's skill; and its colouring is never garish, or startling.

When we remember that the workers who accomplished all this were the pioneers in the art of glass-blowing, and men who had no long

¹¹ Kisa, *op. cit.*, pp. 821 ff., figs. 347 ff.

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tradition to guide them or to provide them with examples of what to do and what not to do, we cannot but feel admiration for the skill and prowess which they attained in the new-born art.

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Polychrome Jewellery in Kent

by T. D. KENDRICK

THE remarkable garnet-inlaid jewellery from Teutonic graves of the Pagan Period in Kent can be safely recommended as one of the most promising subjects for a research-student that English archaeology has to offer. It is to be hoped that this short introductory study will attract attention to it.

The jewellery can be divided into two main groups, that we shall call Styles A and B, and our survey begins with Style A, 1, of which ten examples are shown on PLATE I. In this class of jewel are eleven composite disc-brooches of gold and silver (*e.g.*, PLATE I, 5), sixteen ordinary silver-gilt disc-brooches (*e.g.*, PLATE I, 1-3, 8-10), nine gold pendants (*e.g.*, PLATE I, 4), and eight other ornaments, making a total of forty-four pieces, of which all come from Kent except two of the composite brooches, three of the pendants, and four of the miscellaneous ornaments.¹ Every piece shows step-pattern cloisonné, which is usually crisp and carefully controlled work. In twenty-four of the brooches the cloisonné is associated with filigree work, and in the three others, where the filigree is now missing, we may be sure that the brooches were originally designed to carry filigree ornament in the appropriate spaces. In twenty of the brooches the cell-fillings include an opaque cobalt glass in addition to the usual almandine-garnet and pearly shell; in five others this blue glass was probably used, but has now disappeared. Cobalt glass also occurs with the customary garnet on ten of the other jewels, and filigree is also found on ten of them. In contrast with this regular appearance of cloisonné and filigree, niello-inlay is rare, for it is found only on ten of the disc-brooches.

Style A, 1, jewellery represents craftsmen of unequal skill. For

¹ It may be possible to show that a few pieces found outside Kent, *e.g.* the Winterness-moor brooch in Sheffield Museum, are not of Kentish manufacture; but the rarity of such jewels makes it unnecessary to investigate the matter in an article that is concerned with Kent only.

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example, the Faversham brooch illustrated as no. 8 on PLATE I is poor work of this school, the cloisonné being trembling, bungled stuff (cf. the admirable and normal work on PLATE I, 2), the filigree being plain ringwork (cf. the magnificent, minute work on nos. 2 and 5), and the border being unimpressive and clumsy (cf. PLATE I, 1). That is to say there is both good and bad work within the class. There is also something else to notice. Certain groups of objects reveal a marked evolution in style. Thus the development from the thin, elegant Dover brooch with its firm cloisonné and its delicate filigree (FIG. 1, 1 and PLATE I, 5) to the thick and clumsy Sarre brooch (FIG. 1, 3 and PLATE IV, 4)

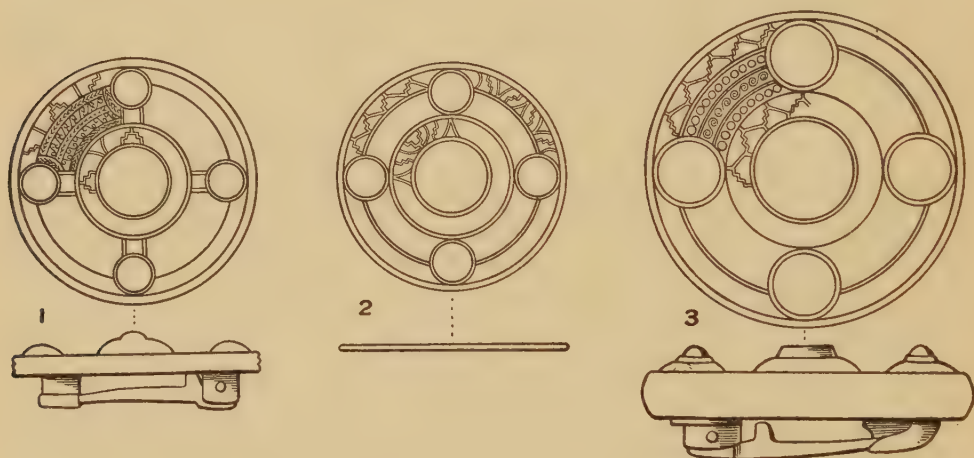


FIG. 1. JEWELLED BROOCHES FROM DOVER, AYLESFORD AND SARRE ($\frac{1}{2}$)

shows changes of a sort that look as though they may have taken some time ; for if no. 3 of figure 1 is a contemporary of no. 1, it is astonishing that, in addition to clumsier form, cloisonné of a different pattern, and filigree of a different pattern, it should yet possess a design obviously related to the design of the first brooch, but so far removed from it that we have no difficulty in finding an intermediary form (FIG. 1, 2). The Sarre brooch was worn after the beginning of VII, as the accompanying coin-pendants prove, and there is no reason why the Dover brooch or the Aylesford brooch (FIG. 1, 2) should not have been worn at a similarly late date ; but handling the Sarre and Dover brooches together, one does not easily agree that they were made at the same time, and, as there would be no difficulty in showing that the

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arrangement of figure 1 is correct (*i.e.*, no. 1 cannot be a later and improved model of no. 3), we may reasonably expect to look backwards during our studies over a period of considerable length that ends, and not begins, in early VII. There is one other point to be noticed. The Aylesford brooch (FIG. 1, 2) is in reality only a brooch-cover, and it seems to have been found in a grave in this state, minus stones² and filigree, and minus its back. It is not the only example of a brooch that apparently had been buried *unfinished*.

We now turn to Style A, II. This is a small group consisting of four composite brooches, one disc-brooch, and one pendant, all coming from Kent except two of the composite brooches. They have cloisonné ornament, but very little of the step-pattern work that is characteristic of Style A, I. On the other hand, they show us a new cloisonné feature

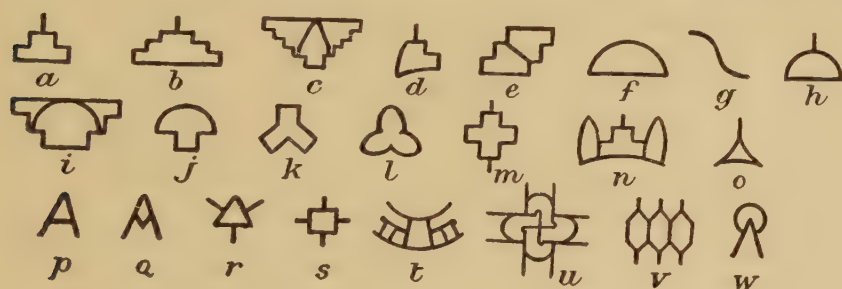


FIG. 2. CLOISON-PATTERNS IN KENTISH JEWELLERY OF STYLE A

of considerable importance, namely the honey-comb cell (FIG. 2, v), which occurs on three composite brooches. We note also the appearance of the impaled disc in cloisonné (FIG. 2, w) on the disc-brooch and the pendant, and of the one-piece 'mushroom' cell (FIG. 2, j), which is derived from a step-pattern design (FIG. 2, c and i). All six ornaments are associated with filigree work, but only two have cobalt glass in addition to garnet-inlay. There is no niello-work at all. In previous accounts of the Kentish jewellery, these brooches and the pendant have been grouped with the rest of the cloisonné jewellery, and there can be no doubt whatever that they are inseparably connected with the step-

² The brooch, so Mr N. Cook informs me, was brought into Maidstone Museum almost immediately after its discovery. The workman who found it said the stones disappeared when the brooch was washed under a tap. A similar catastrophe of which I was a witness suggests to me that these soluble gems are nothing but caked mud.

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pattern class of jewels. Taking Style A, I and II together, then, we have 49 jewels of a single 'filigree and cloisonné' family, of which most examples (A, I) show step-pattern cloisonné, though a few (A, II) have little or none of it and introduce us to honey-comb work.

Style B is illustrated by nine examples on plate II. The class consists of close upon ninety disc-brooches, twenty square-headed brooches, and about ten other ornaments. These 120 or so pieces, of which all but seven were found in Kent, are characterized by an inlay of garnet, blue, green and amber³ glass, and shell, in cast settings, by chip-carving ornament, and by the abundant use of niello. There is no cloisonné and no filigree.

In most of the disc-brooches the garnets in the field are three or four in number, and are set keystone-wise round the central ornament. In twelve examples, however, the keystone arrangement is abandoned and the garnets are in stepped settings (*e.g.* PLATE II, 3 and 7). These last brooches usually have jewelled borders, and the niello-ornament on four of them is the peculiar ringlet-pattern that is to be seen on three of the disc-brooches of Style A (*cf.* PLATE II, 8 and PLATE I, 8-10).

This group likewise shows us considerable difference in the excellence of the craftsmanship and an appreciable variation in style. It cannot be dismissed as cheap inferior jewellery of the Style A class, in as much as both classes, A and B, contain within themselves good and bad jewellery of their own kind. On the contrary, it represents a different tradition of craftsmanship, as the following table of technical differences ought to make clear.

Style A, I and II	Style B
All have cloisonné	None has cloisonné
No chip-carving ⁴	Chip-carving and cast settings the rule
Filigree common	No filigree
Use of blue glass common (70%) and gems en cabochon frequent	Blue glass rare (about 10%) ⁵ ; no gems en cabochon
Niello rare (20%)	Niello common (90%)

³ Amber glass occurs once—on a disc-brooch believed to have been found between Wincheap and Thanington, Canterbury (Wacher Coll.). It also occurs on a Style A, I disc-brooch, probably from Faversham, in the Canterbury Museum.

⁴ It does occur very rarely on buckle-hoops; but it is geometric work, not the characteristic zoomorphic chip-carving of Style B.

⁵ And never the powder-blue opaque glass, resembling lapis lazuli, that was commonly used in Style A work.

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The next point to make is that these two styles are contemporary. This does not mean that any ornament of Style A is of the same date as any ornament of Style B, but merely that, whatever their complete history may have been, the two fashions existed side by side for a period of some length. The matter is important, as Style B is sometimes assumed to be earlier than Style A. The reasons for believing them contemporary are : (1) disc-brooches of Styles A, 11 and B were worn by the same woman and were found together in her grave (Kingston 299) ; (2) disc-brooches of Styles A, 1 and B have been found independently with handled bronze bowls having trivet stands (Kingston 205, and Gilton 19), with crystal spheres (Chartham Downs and Sarre 4), with cowries (Wingham and Kingston 299), and with amethyst beads (six graves A and two graves B)⁶. A disc-brooch of Style B has been found in a grave (*Archaeologia*, xxx, 52) with a buckle of exactly the same form as the Wickham buckle in Style A, 1 (PLATE III, 2) ; (3) a disc-brooch of Style B bears in niello on its back the step-pattern cloisonné design of a Style A brooch (Ashmolean) ; (4) three Style A, 1 brooches have the very peculiar marginal ringlet-in-niello ornament that also occurs four times on Style B brooches. Seven Style A brooches have the popular zigzag niello border of the Style B jewellery.

So much for relative chronology. We now come to the problem of the date when these two styles flourished. It should be explained that English archaeologists do not seem to find much difficulty in believing that some brooches of Style B were made in early VI (e.g. the usual dating of Sarre 4 and Bifrons 29 and 42) ; but they will not agree to an earlier date than late VI or early VII for the Style A jewellery, even though Pilloy in 1912 admitted some of the equivalent continental pieces into his Period I (500-540), and Veeck, in an important recent work, does not hesitate to assign some very elaborate cloisonné brooches to early VI. Our English view, supported by Dr Åberg of Sweden, is that the bulk of the Kentish polychrome jewellery, particularly of Style A, must represent the Jutish ascendancy in the days of Ethelbert (d. 616). This is a likely hypothesis, and it is apparently supported by certain considerations that are mentioned on page 438. Nevertheless we are going to suggest that it is profoundly wrong. The view taken here is that a substantial part of the polychrome jewellery of Kent represents an earlier Kentish population than the Jutes of Ethelbert,

⁶ The argument if $A=B$ and $B=C$, then $C=A$ is dangerous when $=$ means 'is contemporary with'. But with the proposition repeated for D, E and F and knowing that $B=D=E=F$, I think we have to admit that C and A are contemporary.

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and that so far from being an expression of 7th century Jutish greatness, it really belongs to the archaeology of the Jutish invasion and settlement. The details of this adjustment will follow later. In the meantime it is only necessary to plead for a central date 'about A.D. 500' as an indicator of the period when most (not all) of the jewels were being worn.⁷

The reasons for suggesting this date are many in number. It is not to be expected, however, that we are going to make converts here, so it will be sufficient to give two arguments that have hitherto escaped attention. The charitable reader will no doubt be ready to believe that we are not without corroborative material, and he will perhaps bear in mind that some general remarks that come later in this paper also deal with the chronological problem.

I. The Ringlets-in-Niello Inlay. This is an extremely rare and peculiar form of ornament in which tiny hoops of metal (often penannular) are sunk into a ribbon-like field of niello. It is obviously connected very closely with the ring-and-dot in niello, as on the Nydam scabbard mount at Flensburg or on a small number of early radiated brooches, which belongs to late v or 'about 500'. We can, however, find the real *ribbon of niello* with its ringlets on two well-known pieces of Teutonic metal-work abroad (Salin, FIGS. 118, 481), and of each of these we can declare confidently that a date in VII is impossible and that one in late v is unassailable. Salin said so, and everybody agrees. Thus a remarkable ornament of very infrequent occurrence that is also a technical speciality of the rarest sort is found in chip-carving Migration Period jewellery on both sides of the Channel, and on the continent it is not found after late v.⁸ We all know the dangers of judgment according to the adjacent archaeology, but we may be quite sure that in any other field of enquiry this piece of evidence would be thankfully paraded as convincing testimony, and we should not be allowed to date our English examples over a century later than the similarly decorated continental pieces. We suggest, therefore, that until there

⁷ I find that close dating is impossible in Anglo-Saxon archaeology. I hope the reader will be content with 'second half v', 'about 500', 'second half vi' and so on. The real point of the proposed shift is best explained by abandoning even these vague guides and saying that the change is from 'Ethelbert Period' to 'Settlement Period'.

⁸ I am sorry to say that this statement is not based, as it should be, on the results of extensive travels. I hope to investigate the matter personally, but in the meantime I have to thank colleagues abroad for helping me and for their patience with my enquiries. Note that argument based on similarity of ornamental and technical details is only valid when one is dealing as, here, with *like things of the same culture*; you use it at your risk when comparing, for instance, Anglo-Saxon and Irish material.

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is proof to the contrary, we shall have to assume that the Kentish jewels with this curious niello-work are not later in date than about A.D. 500. Pieces thus branded are nos. 8, 9, 10 of PLATE I, and no. 8 of PLATE II.

II. The Imitative Buckles. PLATE III shows six buckles of very much the same form, each with a shield-shaped plate at the foot of the tongue. No. 2 has the plate jewelled with a typical example of Style A, 1, cloisonné, showing the characteristic blue-filling of the stepped cell. It has extremely fine rolled wire margins (simulating braided wire, which it is not), and a very clever animal-pattern on the plate, showing four intertwined creatures executed in delicate filigree on an embossed plate of gold. No. 4 shows us a buckle with the ornament executed entirely in an admirable filigree. We can have nothing but praise for these beautiful ornaments, nor can there be any hesitation in ranking no. 2 as the contemporary of a brooch such as PLATE I, no. 5. Look next at no. 1 on PLATE III, and contrast its tongue-plate with that of no. 2. Note the shaky uncertain cloisons, and the stupidly arranged blue and green glass; notice also the extreme coarseness of the filigree. Yet we observe that the object itself is well-made and that the craftsman knew a part of his business, as witness the admirable step-pattern design *in niello*, on the exterior of the hoop. It is only in his cloisonné and in his filigree that he appears as a bungler. Now this buckle was found with a set of particularly handsome jewels of Style B work (PLATE II, 6 a and b are two), and it seems clear that it represents a jeweller who was a beginner at cloisonné work and animal-pattern filigree, but an expert at the casting of jewel-settings and at niello-work. In other words it is one of the rare pieces (which we can call Style A, III) that were made by a craftsman of the Style B jewellery who was abandoning his own technical tricks in order to imitate Style A. How he would make a buckle according to his own tradition of craftsmanship can be seen by looking at PLATE III, no. 6 (though there is no doubt that he could do much better). But no. 1 is not work in his own idiom. It is work imitating no. 2. And so is no. 3. Look at its feeble cloisonné, and the deplorable weedy end to the pattern of very coarse filigree.

Our claim is, then, that buckle no. 1 imitates the polychrome jewellery Style A, 1. If that claim is allowed, it follows that the date of buckle no. 1 will give us a point in time *before which* a considerable quantity of the Style A jewellery had been made—enough of it, that is, to excite admiration and to suggest the idea of imitating it. Of course,

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the orthodox date for the buckle is VII, but in this article we presume to call it early VI, for two reasons : (a) because it bears the tell-tale ringlets inlay, and (b) because it was associated with two square-headed brooches (PLATE II, 6a is one of them), and a piece of Style I metalwork (PLATE II, 6b) that no reasonable person would call VII, or even 'end of VI', if found without the buckle.⁹ To put our case crudely, therefore, we claim that the existence of buckle no. 1 proves that buckle no. 2 cannot be later than early VI, and that buckle no. 2 proves the equivalent cloisonné work of the type of the Dover brooch to be similarly early.

Let us take another example, the buckle no. 5. Those who know Kentish cloisonné really well will agree that this too shows imitative work. Of course in comparison with no. 1 its cell-work shows astonishing skill on the part of the craftsman ; but compare it instead with no. 2. Notice the soft irregular steps, the travesty of a stepped cell in the centre, and the ill-fitting scraps of glass that replace the neat step-fillings of standard Style A work. Here is a craftsman that knew exactly what his cloisonné should be like—stepped cells with a coloured filling. Look back, however, to the jewellery illustrated on PLATE I. You see that the maker of the buckle was not of the Style A school. He only copied Style A work. Once again we can say that a considerable quantity of the best Style A work had been made before our buckle no. 5.

What then is its date ? It was found in a rich burial accompanied *inter alia* by two magnificent drinking-horns that bear examples of early Style I metalwork *in mint state* and show precisely the same superior sort of zigzag niello-work (as on PLATE II, 1) also to be seen on pieces agreed to be early VI (it is, in fact, really rather improper to assign these horns to any other date—unless it be late v !). The grave also contained *a set of four* extremely delicate lobed glass beakers of an early type that were probably made in Germany in mid v. That they should survive, all four, for about 200 years during the storm and turmoil of the Migration Period may strike one as so remarkable that some people would say it was definitely unlikely ; whereas that they should appear in the grave of a man who might have been alive when they

⁹ Dr Åberg (*Anglo-Saxons in England*, p. 201) is pardonably cautious about this association. But ought one to claim that because in 1792 these *and other objects figured with them* came from 'graves', therefore we must disbelieve the B.M. register of 1862 which says that these objects *alone* came from one grave ?

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were made is credible. The buckle was also accompanied by a number of other magnificent and opulent-looking objects, and by this regal warrior's shield-boss. It is one of the Kentish conical family; but the humble early type, not the imposing and swollen 7th century version of it. Naturally no one is going to pretend that both types could not have been in use at once; yet it is surely in the highest degree improbable that this vainglorious prince would allow the little old-fashioned boss to appear among his treasures, had he lived at a time when the swaggering, monster boss was in vogue. In short, everything points to a date early in VI for this grave, and there would be no need for hesitation about it here, were it not the famous Taplow burial—which wise friends declare should be dated about A.D. 625.

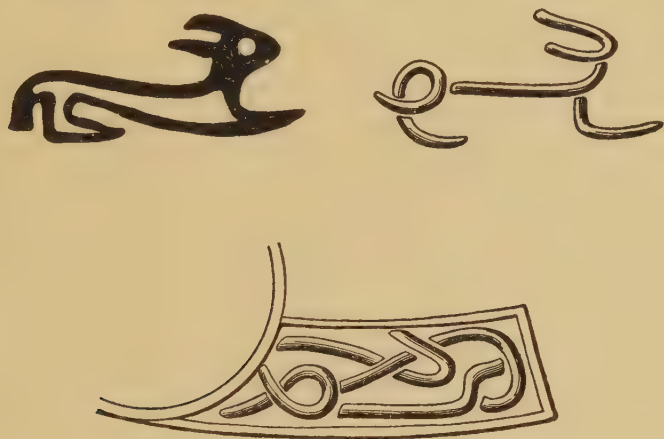


FIG. 3. ANIMAL-ORNAMENT IN ENAMEL AND FILIGREE

One reason for assigning the Taplow burial and the Style A jewellery to early VII is this. The burial contains examples of Salin's animal-style II, and a number of 'A' jewels are associated with, or actually bear, designs in that style. To this one must retort that it is time we abandoned the fiction that Style II is exclusively an art of VII. Sune Lindqvist long ago showed that it was in existence at the end of V, and even orthodox archaeologists have discovered it as far back as mid VI. The idea seems to be that some enormous stretch of time is necessary for the production of the evolved and degenerate animal-pattern that we find on our brooches. We therefore illustrate here (FIG. 3) the formation of the pretended 7th century animal on the

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famous brooch from Kingston, Kent (PLATE IV, 1), by translating *into piecework filigree* an enamelled free-style animal of late v that comes from Faversham in the same county (if you do not like this prototype, help yourself to one off the Novocherkassk crown or the Nordrup beaker). This diagram, of course, proves nothing, except perhaps that we must not neglect the influence of technical processes on the art of the jeweller. But it will show the reader that we are not afraid of the Style II battleground, even though, as he will no doubt generously agree, it is too big a subject to handle here.

Other reasons for believing that most of the fine cloisonné jewellery was made in the days of Ethelbert are based on its appearance on a little clasp in the Crondall hoard (c. 600) from Hampshire, and on pendants in the Wieuwerd hoard (c. 625) from Friesland. To these we add that the Sarre brooch (FIG. 1, 3 and PLATE IV, 4) was certainly worn c. 625, or even later, and that at about the same time an ill-fitting coin of Heraclius and Tiberius was inserted, presumably to replace some earlier centrepiece, into the pendant from Wilton, Norfolk. It is also suggested that this and the Ixworth pendant from Suffolk, being crosses, must be later than the introduction of Christianity into England by St. Augustine.

These reasons do not seem very impressive. They prove simply that some of this cloisonné was worn and treasured in early VII, which nobody has ever denied. It is, indeed, to be expected that plenty of this pretty stuff would survive, and as a matter of fact, there are sound archaeological reasons for believing that late in the sixth century a number of both early and late Kentish jewels may have travelled to new homes, where they were probably prized for many years. It is certainly no part of our case that cloisonné work as a craft came to an end in early VI; we say merely that most of the best work was made at that time or before that time. It is admitted that the Sarre (British Museum) and Abingdon brooches probably represent the Kentish jewelcraft of mid VI. And you have the Bacton pendant and St Cuthbert's cross to show you the inferior and altered styles of VII.¹⁰ As to the 'St Augustine' argument, do not the Gourdon patten and chalice, that may

¹⁰ With regard to the Wieuwerd hoard, I do not see that it affects Kentish chronology in any way. I admit that the pendant with the impaled disc cell-work ought not to be later than mid VI on my reckoning, and we note that this piece is damaged and repaired, so that it was probably already of some age when it was deposited in early VII. The pendant in an inferior A, 1 style may well be work of late VI; note the ugly and late form of barrel-loop (cf. Wilton pendant) and the coarse filigree background.

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well antedate the baptism of Clovis (496), warn us that post-Roman and jewelled metalwork is not necessarily made for, or the property of, converted heathens?

Another, and recently expressed, objection to the early date here proposed for the best Style A, I, brooches is that the West Saxons did not copy the arrangement of their design, at a time when some West Saxon saucer-brooches were showing the influence of the Style B Kentish disc-brooch. 'They took as their model', says Mr Leeds,¹¹ 'the design of an earlier class (*i.e.* our Style B brooches) and remained satisfied with that, merely following the fashion of ostentatious size in the later Kentish class'. It has already been pointed out (p. 433) that there are grounds for distrusting the dictum that the Style B brooches are an early class and that the Style A brooches are later,¹² so we might, of course, try to scramble out of this difficulty by merely adding to our earlier remarks a respectful, but definite, protest against being thus blamed by Mr Leeds for the backwardness and barbarity of his early West Saxons. But, if we are honest, we must acknowledge that our attempt to prove the two styles are contemporary does not fully answer him. On the contrary, with the terrifying acumen that enables him so easily to maintain his position as Grand Master of Anglo-Saxon studies, Mr Leeds has now brought us face to face with a difficulty beside which our little chronological problem is as nothing. It is not very confidently, therefore, that we attempt to answer his main enquiry, but perhaps the position we are going to take up will be revealed if we say at once that the reason why Kentish cloisonné jewellery did not influence the West Saxon craftsman is because they never saw as much as a scrap of it before the days of Ceawlin, when they had for the first time an opportunity of admiring the Abingdon brooches. Until the second half of VI, it was essentially a non-Saxon craft, and was exclusively confined to East Kent. On the other hand, Style B work is twice as common; it was work of the vernacular Teutonic chip-carving school, like the saucer-brooches, and it was not confined to East Kent, having spread with the Jutes across south England to the Isle of Wight. On our view, that it should be the Style B jewellery which first influenced the West Saxons, and not

¹¹ *Antiquaries Journal*, 1933, XIII, p. 246.

¹² Mr Leeds was referring, of course, to the composite brooches only, which I group with the disc-brooches. I maintain solidly that the composite brooches are not a distinct and later class than the disc-brooches. Please compare the inner jewelled rings of PLATE I, 10 and PLATE IV, 1.

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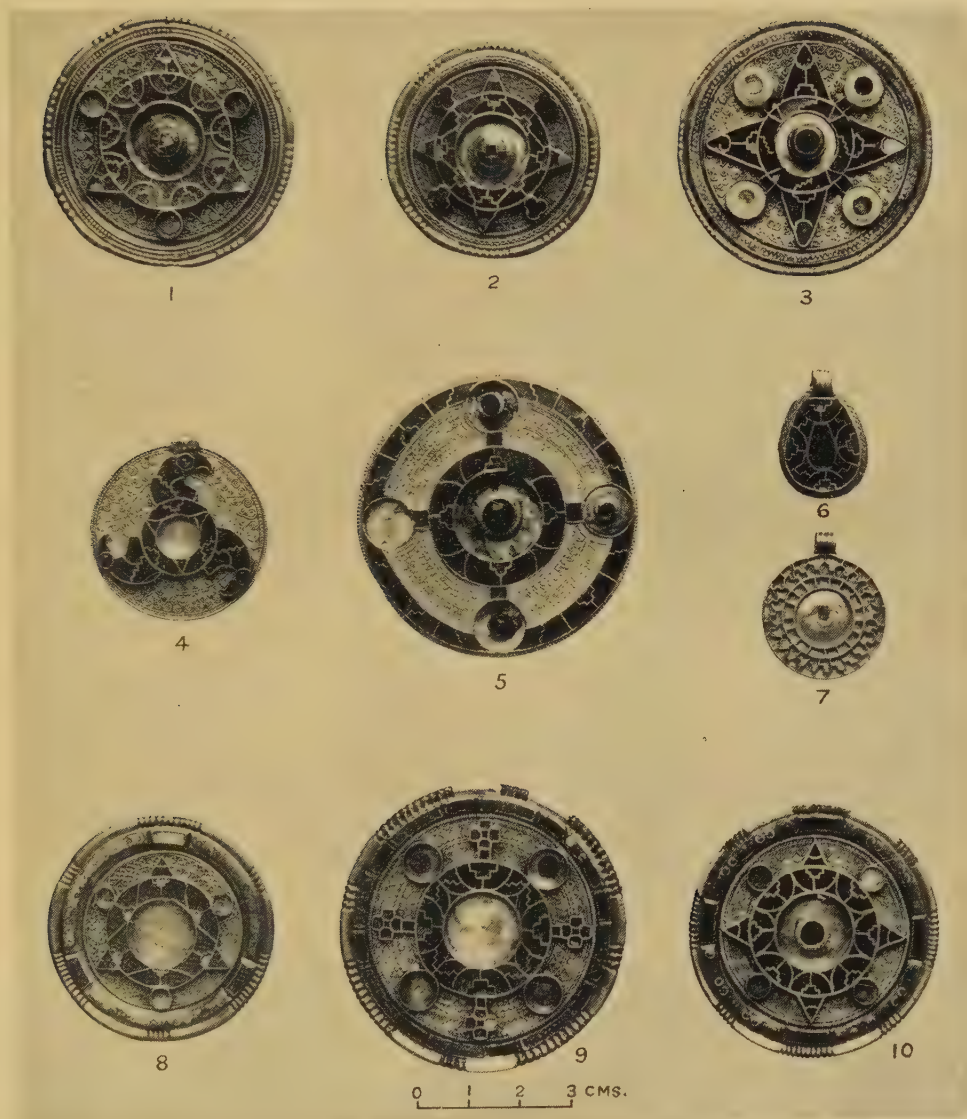
the Style A work, is a circumstance so natural that we might almost venture to say that it corroborates the novel picture of Kentish archaeology that we now propose to draw.

You do not have to make a very profound study of the Jutish graves in Kent before it becomes plain that the Style A jewellery has a cultural background of its own. This is particularly remarkable for its 'luxury' or 'foreign' aspect. For instance, it is associated on no less than five occasions¹³ with Coptic bronze bowls, and on six occasions with the well-known elongated or oval amethyst beads—which may well come from the same country as the bowls. It is also associated twice with Indian cowries. Jewellery of Style B has, on the other hand, a different background; there are no Coptic bowls, no cowries, and only two accompanying finds of amethyst beads; but it introduces us to the square-headed and radiated brooches that have not hitherto been found in any grave containing Style A brooches. We cannot pretend any longer that this difference in culture is due to a difference in date,¹⁴ as we hope has been made clear (p. 433), so the time has come to say plainly that there are two contemporary post-Roman cultures in Kent, which are geographically distinct, except in the 'mixed' settlements at Faversham and Sittingbourne. The first culture (Kent I) is situated chiefly in Thanet, the valleys of the Stour and Little Stour, and the Sandwich country, that is to say the triangle of lowland between Herne Bay, Sturry, and Walmer; but it also includes, in the south, settlements on the foothills between Folkestone and Stowting, and, in the west, the Medway stations from Chatham to Maidstone. The second culture (Kent II) is that of the Watling Street, and is seen characteristically south of Canterbury on the highlands between Kingston and Dover,

¹³ This number includes the imitative (A, III) Taplow buckle.

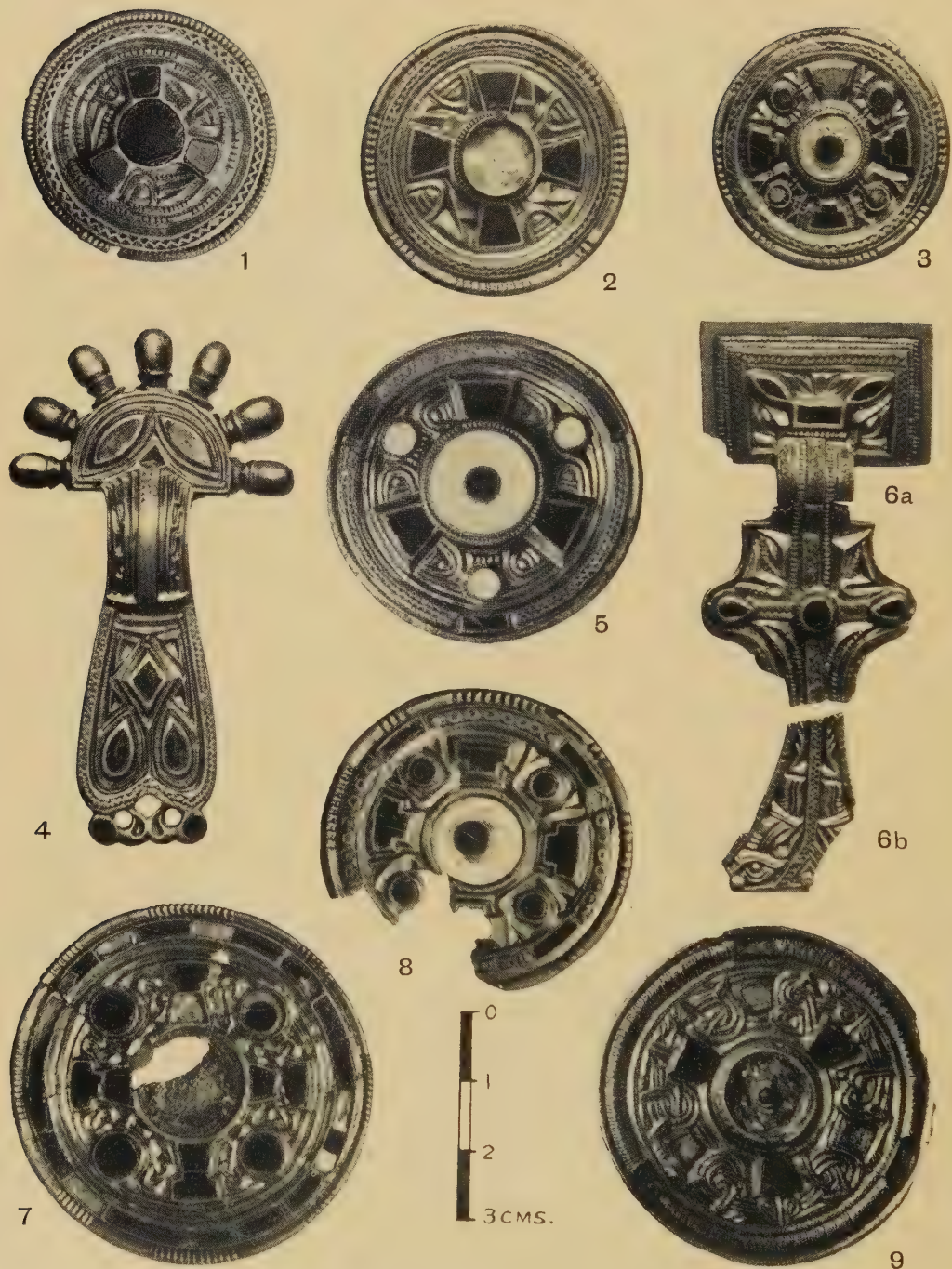
¹⁴ See footnote p. 442. The Coptic bowls, and presumably the amethysts and cowries, are said to be late in Kent. It is worth while observing that the admittedly inadequate evidence available points the other way, especially as regards the bowls and the beads. One ought not to argue that the bowls were imported in VII and not before, merely because one example, described by the finders as patched and worn, was found in a Sarre grave that we know to be late; nor does it follow that cowries were not imported before VII simply because *outside Kent* they occur in late burials. If one enquires abroad one finds the bowls and beads referred to IV–VI in Egypt (why should the Jutes of VII have organized an absurd trade in antiques?) and even Dr Åberg admits that the cowries had found their way into Europe by mid VI. It does not seem to be generally known that they were circulating long before this. They occur in a Gallo-Roman cemetery at Trion and they are found at Pompeii, for instance. In this country they occur in a Cornish barrow (as Mr Opie has remarked to me) and also in a Hampshire pit-dwelling.

PLATE I



CLOISONNÉ JEWELLERY FROM KENT, STYLE A, I. (See pp. 429-30)
(British Museum)

PLATE II



CHIP-CARVING JEWELLERY FROM KENT, STYLE B. (See p. 432)

N.B. No. 4 was only 'probably' found in Kent

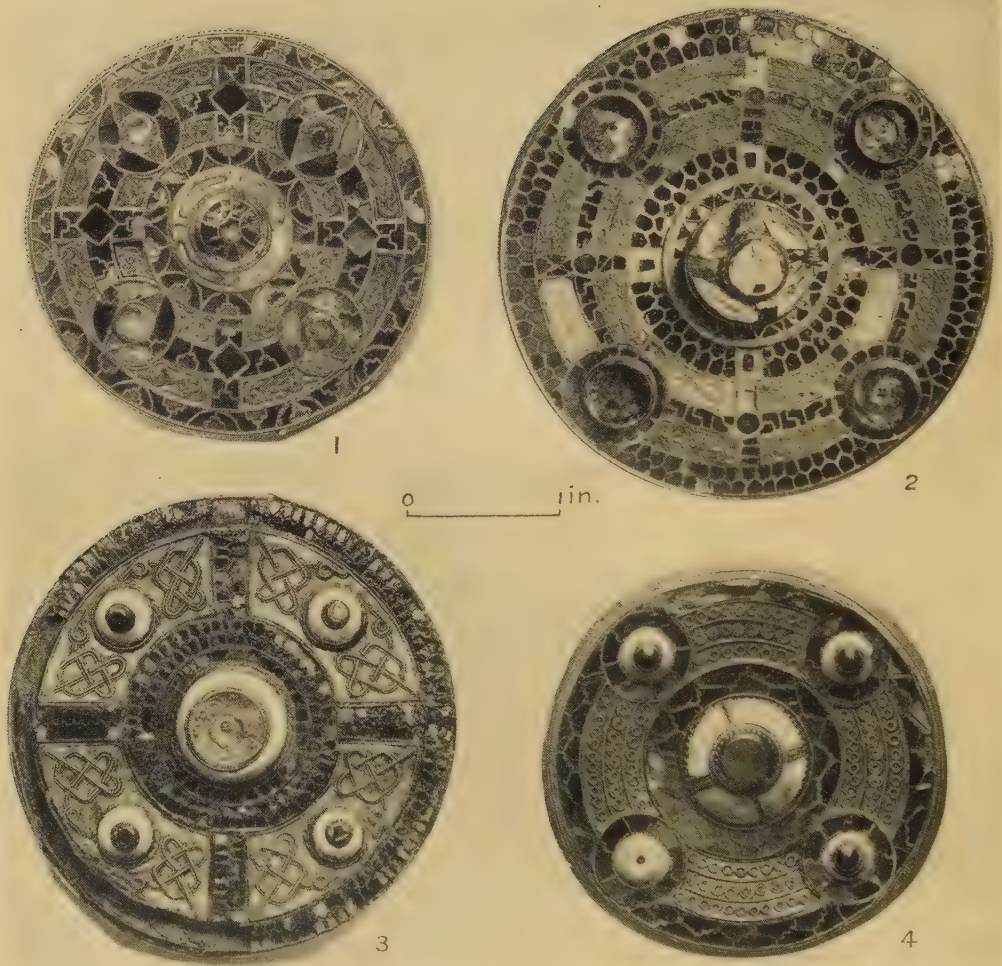
All British Museum

PLATE III



ORNAMENTAL BUCKLES FROM KENT AND TAPLOW (No. 5). (See pp. 433, 435)
(British Museum)

PLATE IV



JEWELLED 'COMPOSITE' BROOCHES FROM KENT AND ABINGDON (No. 3). (See pp. 430, 438)

- 1, from Kingston, by courtesy of the Liverpool Museum ;
- 2, from Faversham, by courtesy of the Fitzwilliam Museum, Cambridge ;
- 3-4, from Abingdon and Sarre, British Museum

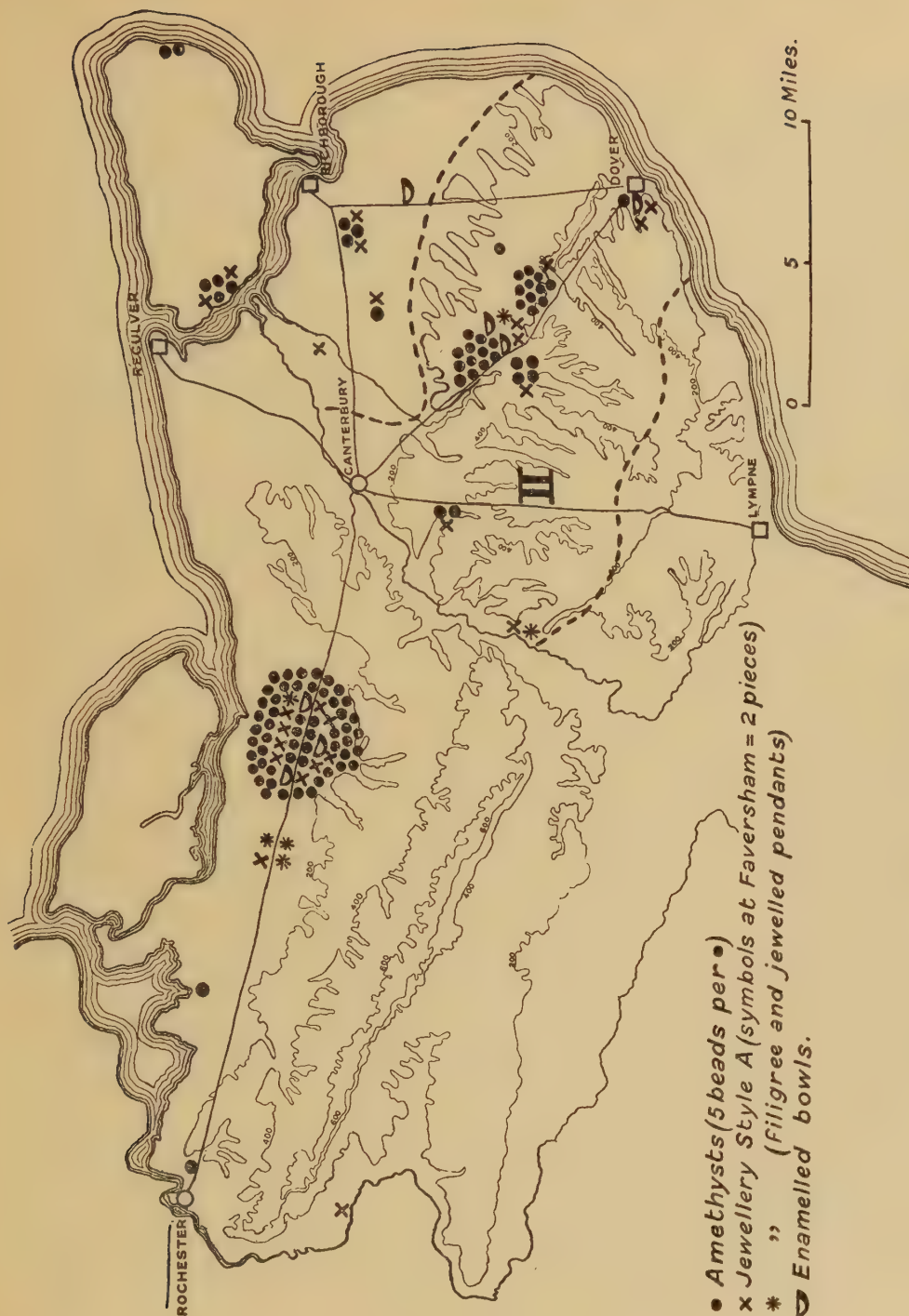


FIG. 4. MAP OF KENT, SHOWING WATLING STREET CULTURE

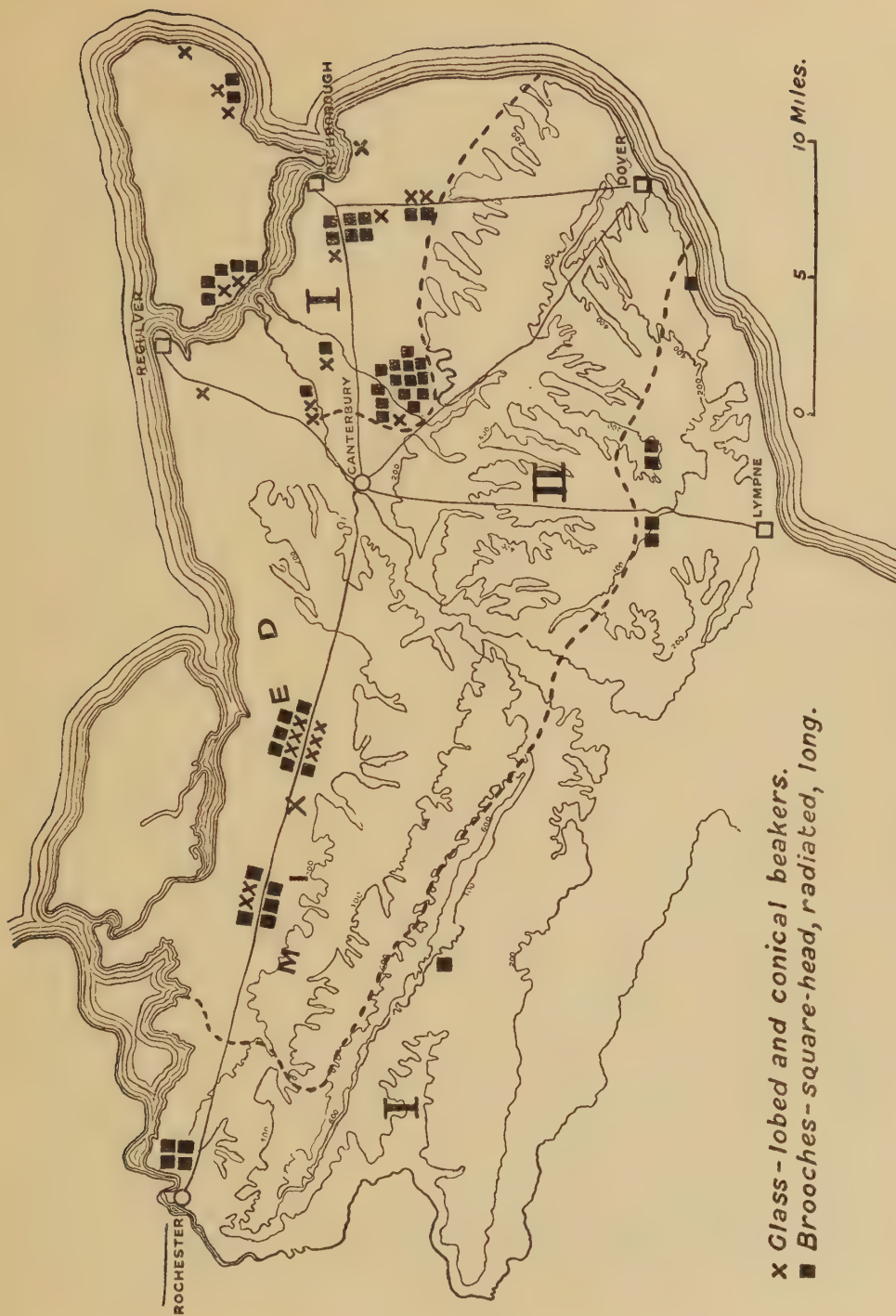
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but it is also represented above Canterbury in the Faversham area, where, however, it is associated with the Kent I culture. The distribution of the amethyst beads shows us that about 150 of these imported luxuries come from graves on Watling Street, whereas less than fifty found their way in the Kent I graves off this great trade-route. The cloisonné and filigree jewellery is also concentrated on the Dover-Sittingbourne line, and we may note in passing that it is here, on the road between Dover and Faversham, that six enamelled 'British' hanging bowls were found, only a single mutilated escutcheon from Eastry having been discovered in the settlements of the Kent I culture.¹⁵ The distribution of square-headed, radiated, and long brooches, and also of lobed and conical glass beakers, show us the settlements of this first culture. The large Howletts and Bifrons cemeteries are archaeologically of great importance in this connexion, for they seem to have nothing whatsoever about them that is typical of the Watling Street culture, though they lie in the Nail Bourne valley just under the Watling Street ridge.¹⁶

The absence of Style A jewellery from Howletts and Bifrons, its rarity at Sarre and Gilton-Ash, its non-appearance at Folkestone, Stowting, and Chatham, and, even more important, its absence in the one great Jutish cemetery outside Kent (Chessel Down, I.W.), are matters that it is desirable to emphasize here. We cannot possibly object to the chip-carving and sunk-setting work of Style B, which is present at all these places, being called Jutish, for it is demonstrably a typical 'invasion' fashion that is found all the way from Thanet to the Isle of Wight. But can we say with equal confidence that the cloisonné work of Style A is Jutish too?

¹⁵ The Coptic bowls are inclined to desert Watling Street. Two come from Faversham and one from Teynham, close at hand, but five others (accompanied in four instances by cloisonné jewellery) were found in the Sarre-Gilton area. We know, of course, that one of the Sarre bowls was found in a grave of VII. It is surprising that the enamelled bowls did not also stray, and one has to deal warily with the distribution of a *small number of costly* objects. Remember that the Sarre and Gilton cemeteries were in use for over two centuries.

¹⁶ This makes the 'later date' theory for the Kingston type cemetery very difficult to believe. If you say that Kingston (2 miles from Bifrons) is different because the Jutes did not get there until some time after the occupation of the valleys, one wonders why pottery bottles and Style B disc-brooches should have been taken up the hill, if so much time had elapsed that square-headed, and radiated, and long brooches had been abandoned as out of fashion. Burial customs, it will be noted, apparently changed *during the climb*. The Nail Bourne fashion is flat graves; up at Kingston you have the famous straggling lines of barrows.



x Glass-lobed and conical beakers.
 ■ Brooches-square-head, radiated, long.

FIG. 5. MAP OF KENT, WITH DISTRIBUTION OF JUTISH ANTIQUITIES

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Archaeologists would like to answer that it is, and possibly they would explain its rarity on the grounds that we have here a special and costly jewellery that was made for princes and not for common folk, who presumably contented themselves with the chip-carving ornaments. We can use this theory very happily to account for the frequent association with such expensive imports as the Coptic bowls and the pretty amethyst beads. Yet it is not so satisfactory as one might think. For though we can perhaps pass over the matter of the very extraordinary distribution of the Jutish princes, what are we going to say when we find jewellery of both styles *in the same grave*?

It would be imprudent, of course, to say that the vital differences in technique that distinguish the two kinds of jewel imply the presence of craftsmen belonging to two separate folk. At a much later date one can find a somewhat similar division between the filigree-using craftsmen of the Scotie penannular brooches and the brooch-makers who did not use filigree; but one would hesitate long and seriously before suggesting that we have in these brooches the work of two separate peoples. In fact, there is nothing in the least bit extraordinary in one and the same workshop producing simultaneously ornaments of Style A and Style B. Yet, though we can agree that Style A *became* Jutish, it is really very difficult to believe that it was *originally* Jutish, in view of its distribution and its context. You have to invent a separate tribe of the Jutes to account for its introduction and for the differences of burial-custom and grave-furniture that distinguish Kent I from Kent II, and this is a course that is open to fatal objections. The position, archaeologically, is this. Between Canterbury and Dover, holding the highlands across which runs the road to the coast, were a number of settlements of Teutonic foreigners who buried their dead in barrows, who had no square-headed or radiated brooches, and no lobed or conical glasses,¹⁷ and only cheap belongings of what we may call the ordinary Anglo-Saxon types (*e.g.* bronze workboxes, pottery bottles, etc.), and yet were in possession of sumptuous cloisonné brooches, enamelled hanging-bowls, abundant amethysts, and really fine earthenware beakers. It is a duty to offer some explanation, though we have, alas, nothing that is convincing to say. Nevertheless, turning away from one invention to another, we beg leave to suggest that the foreigners of the Watling Street were not Jutes at all, but miscellaneous Teutons, perhaps including folk

¹⁷ I reject the 'Dover' lobed glass to which Cochet (alone) refers, as I believe the locality is a mistake. Excluding this, there are nine lobed glasses in Kent I, none in Kent II, and five in the mixed area.

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like the 'barrow' Angles of Yorkshire, who had come to Kent to dwell as federates in British territory, the distinctive excellences of their culture, after settlement, being due to the influence of British Canterbury. On this view, our Style A jewellery *is of British origin*, though, of course, it was soon to become as Jutish as the chip-carving ornaments; for our supposed Watling Street resistance was no doubt only a brief phase in the story of the Jutish conquest.

Our hypothesis, then, is the reconstruction of what must have been only an episode in the history of post-Roman Kent. It is to the effect that whereas hostile invading Jutes barred the road to Thanet, to Richborough, to Lympne, and to London, yet the road from Canterbury to Dover remained for a while open to the British, whose arts and crafts, and traffic with the continent, had left their mark—long before the Jutish aristocracy had obtained control of Kent—upon the culture of the friendly adventurers from overseas who had been allowed to take up their abode by the side of the great highway, and on the highlands to which the Britons still held tenaciously. There is, of course, no claim here that all cloisonné jewellery in Kent is British. It is urged simply that a few British cloisonné brooches¹⁸ and a few British enamelled bowls appear in the graves of the women of the Watling Street settlements, before the Jutes took control of the workshops of the Britons, and before the Jutes themselves began to make cloisonné ornaments. On this view, the distribution of the Style B disc-brooch can be explained, for, being the response in the Teutonic jewel-craft to the 'British' fashion of the Watling Street, it is to be found at home in both our provinces, Jutish I and II. On this view we can understand why the favourite Teutonic niello-work appears in rare instances on the cloisonné jewels, and even betrays the Jutish craftsman himself at work upon them, at first in unsuccessful and then in successful imitation. There is an explanation, too, for the overwhelming concentration of Style A jewellery in the Jutish graves at one of the very few places where the newcomers dwelt at or near the gates of a Roman settlement, and a reason at last for the extraordinary occurrence of the mutilated or unfinished pieces that were seemingly considered satisfactory ornaments by some Jutish women. We can also dismiss as of no account the fact that all the best pieces of cloisonné

¹⁸ Very few existing jewels are British. I think the Dover brooch (PLATE I, 5) is, the Faversham brooch illustrated on PLATE V, the Canterbury Museum pendant, the Forest Gate jewel in the Ashmolean Museum, and a small number of other ornaments, including certain cabochon garnet and filigree pendants.

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come from heathen graves in country cemeteries, which must never cease to astonish us if we believe that these superb jewels represent the splendour of Ethelbert and his Christian court at Canterbury.

There are, however, many who will feel that though it is not easy to accept the cloisonné of Kent as a Jutish innovation, it is still more difficult to believe it to be of British origin—there being, of course, no evidence offered as yet that cloisonné jewellery was made in post-Roman Kent before the arrival of the Jutes. As a matter of fact, it may be possible soon, thanks to a recent discovery, to show that the cloisonné craft (which seemingly came to us from Egypt, like the Coptic bowls) as also, of course, filigree work, was probably known both in Roman Britain and in Roman Gaul. But this important point we shall have to neglect, for we have only time to glance hurriedly at the familiar main body of the cloisonné jewellery, just to see if our hypothesis is going at once to be proved ridiculous or if we can still believe that it is worth consideration.

A full analysis of the European 'Gothic' or 'polychrome' jewellery would be out of place here¹⁹, but we can conveniently give a summary account of the types that concern us by dividing the material into two main groups: I—the jewel-styles that do not show step-pattern cloisonné (except in rare, half-breed instances), and II—the styles that have a dominant step-pattern cloison. Setting aside the ancestral 'Bosporan' jewels, we have as a beginning in the first group (I) the *Petrossa* style (A), which includes such celebrated jewels as those in the second Szilagy-Somlyo find, and for general purposes such as ours may be said to belong to late iv and early v. Then follows (B) the *Cesena* style, in which the honeycomb cellwork appears, a fashion of late v and early vi, and also, at about the same time, the *northern Visigothic* style, which does not require our attention. We pass on, therefore, to (C) the *Early Quatrefoil* style of mid and late v, that is divided into two sub-groups, C 1 being the cloisonné jewellery of the upper Rhine and northeast France, and C 2 being jewellery found south of the Alps. The cupped cloison (FIG. 6, row C, 2nd from left) is a test here, but the two groups are so closely related that there is no need for us to treat them apart. Finally, in late vi and early vii we have (F) the *Monza* style, in which we find the gospel-cover of Theodolinda,

¹⁹ The best general account of cloisonné jewellery, with special reference to the antecedents of the Kentish jewels, is by Mr O. M. Dalton. It will be found in the introduction to his catalogue (Cambridge, 1912) of the McClean Bequest in the Fitzwilliam Museum.

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the Visigothic crowns, and so forth. A number of late Frankish jewels and St. Cuthbert's pectoral cross probably represent collateral schools of the same period. The second, or step-pattern, group (II) consists of (D) the *Byzantine* or *Early Step-Pattern* style of the second half of v, in which we have the Apahida and Gourdon treasures and the Childeric jewels, and then comes (E) the widely distributed *Later*



FIG. 6. CLOISON-PATTERNS IN CONTINENTAL AND KENTISH JEWELLERY

Step-Pattern style that includes some of the best cloisonné of Kent, the Rhineland, North Italy, and Scandinavia.

Style D is very like Style C, and differs only in that it makes regular use of the stepped cloison, which seems to have been an innovation due either to Byzantium or to the Gallic jewellers of v. Style E is patently a product of both the earlier styles C and D, that is to say of the two 5th century varieties of cloisonné which are found in the

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country between the Rhine and the Seine.²⁰ On examining the Kentish cloisonné, we find that it is very closely connected with the early continental work of Styles C and D (FIG. 6). This close relationship does not establish the early date of the Kentish work, but it does at least show that on stylistic grounds there is no reason why it cannot be the immediate insular derivative of the accredited 5th century continental work, and we do not have to assume that it is copied from the foreign work of Style E. It is, indeed, not at all improbable, in view of the quantity of the Kentish cloisonné and of the amazing excellence of the early pieces, that as a class it *precedes* most of the continental jewels of Style E. It is important, for instance, to bear in mind that some of the best examples of the Scandinavian and 'Lombardic' cloisonné occur on the jewelled hilts of 'ring-swords', and on the evidence at present available it is impossible to escape the conclusion that the origin of the ring-sword is to be sought in Kent, where the swords with movable rings can tentatively be dated early VI—by which time the best Kentish cloisonné (so we claim) had been made.²¹

The Gourdon patten and chalice, hidden about A.D. 525, are pieces of the same school as produced the jewellery in Childeric's grave (d.481). They must have been made in the second half of v and are presumably the work of Byzantine craftsmen who made them for the use of the Gallic Church and not for the Franks, for Clovis was not baptized until 496. That is to say, the barbarian polychrome jewellery, which had attained some popularity in parts of the Roman Empire by the beginning of v, was further developed during the century by Christian craftsmen within the empire of Gaul, so much so that Childeric and Clovis, themselves patrons of early Frankish cloisonné (Style C), were in the days of the conquest apparently proud to encourage and to follow the fashions of the Gourdon school (Style D). Yet when we find jewelled pectoral crosses in this country, we sweep impatiently aside all considerations of style and craftsmanship, and actually use these

²⁰ All the styles after the Petrossa period are liable to include 'mixed' forms of cloisonné, but in none is this so noticeable as in Style E. For instance, the Wittislingen radiated brooch has panels of a favourite Style C quatrefoil design, the Style E regulation step-pattern, and, in niello on the back, the Cesena (Style B) honeycomb.

²¹ I agree with Lindqvist in suggesting a date in the neighbourhood of mid VI for the continental jewelled 'frozen ring' hilts. But has any archaeologist tackled the problem of the scabbard-mount of the sword from Nocera Umbra 1? For this mount, which does not look later than A.D. 500, cf. Veeck, *Alamannen*, Tf. 31, 9.

PLATE V



0 1 INCH

CLOISONNÉ COMPOSITE BROOCH FROM FAVERSHAM, KENT. (See p. 450)
(British Museum)

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crosses as foundation-stones of the late chronology, declaring that because they are Christian, therefore they cannot be dated before the mission of St. Augustine. Unless it is considered likely that there were no post-Roman Christians in southeast Britain during the period, let us say, 425-475, we have no good reason for shying timorously away from the possibility that the Style D jewellery of ecclesiastical Gaul was the inspiration of our Kentish cloisonné through the mediation of the British princes and clergy. We have to admit, however, that the few pieces of early foreign cloisonné that were imported into Kent

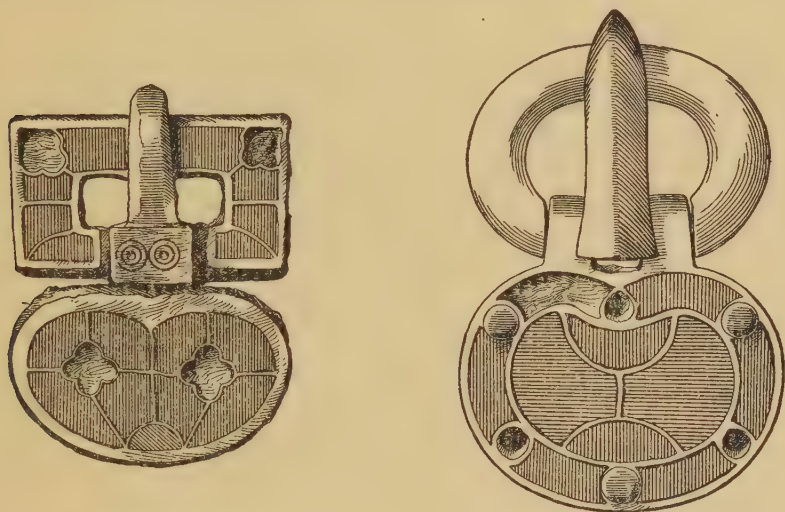


FIG. 7. JEWELLED BUCKLES IN CLOISONNÉ STYLE C, FROM FAVERSHAM, KENT (4)

(*e.g.* FIG. 7), are Style C jewels and offer no confirmation of this connexion²² with the Gourdon cloisonné, so that we must not posit a direct and recognizable influence from the Byzantine school. We must prepare ourselves to believe simply that during the invasion and settlement by the Jutes, the Britons of Kent were abreast of fashion to the extent of developing the cloisonné craft, approximately in the Franco-Gallic manner, but particularly in a native Kentish style.

This is a remarkable claim to make ; but then the Kentish jewellery

²² The multiple-step cloison probably represents the Gourdon period style. It is seen on the Canterbury Museum pendant, where it resembles authentic Gourdon work, on the Forest Gate jewel, and on the Faversham brooch (PLATE V).

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is itself remarkable. Few continental pieces of VI or even of VII, approach in delicacy and intricacy the astounding cloisonné brooch²³ from Faversham with the link-pattern cells (PLATE V). The man who made it was among the greatest craftsmen of his age. He would have had no cause for shame had he seen his work compared with cloisonné from any noted centre of the craft, and it is not extravagant to suppose that this man of Kent was a master-jeweller who had no equal in western Europe. St. Radegund's reliquary at Poitiers (c. 565) certainly proves that the Byzantine cloisonné *enameller* of mid VI was a better craftsman, but the Byzantine cloisonné jewellery of this or the next century (Goluchow Castle cross and the St. Mark's library book-cover) is of a much poorer quality than the Kentish work. This splendid Faversham jewel is so much superior to the ordinary sort of Teutonic cloisonné work that it may justly claim not to be ranked with this, but rather with that much more delicate work which is associated with the enamel-craft. Thus we find ourselves comparing it, not by any means to its disadvantage, with early Byzantine enamelled ear-rings, with the Risano capsule from Dalmatia, with the Castellani brooch, with the enamelled centre of the Style A brooch from Ash in Kent, and with the beautiful little enamelled ring from Sarre in the collection of Dr Wachter. If such a magnificent piece of work as the Faversham brooch can be recovered from a pagan grave in Kent, and if there is no possible room for doubt as to its Kentish origin, then let the continent take care of itself, and let us not be afraid of giving to Kentish craftsmen the credit for originality and enterprise that is incontestably their due.

This article, therefore, does not need apology, but perhaps a treatment of the subject that is provokingly courageous may fittingly be accompanied by a plea for charity. An honest archaeologist knows that alone he cannot solve the vexing problem of Jutish Kent, and in the moments of his deepest despair you will drag from him the admission that his speculations are based on tragically inadequate evidence—for our ingenuity in stylistic and typological studies deceives nobody but ourselves. Nevertheless, having only a thin handful of facts, we are not to be dismissed from court as inadequate witnesses. In just over 20 years time we shall have completed 200 years of work on Kentish archaeology, and it would be a gross injustice to Bryan Faussett, and to

²³ I think this brooch is an unfinished piece, as the filigree is missing. It is not out of the question that it was intended for *enamel*.

POLYCHROME JEWELLERY IN KENT

those who have followed after him, if we allow it to be thought that we have not a great deal of valuable information to offer. Let us have our say, then, for it is plainly our duty to speak ; but let us first make it quite clear that our material, rich though it may seem, does not as yet enable us to put forward a trustworthy theory. All that this article has attempted, therefore, is to give a hasty summary of one (not the only) archaeological method of investigating the Pagan Period antiquities of Kent, to beg some student to proceed further with the enquiry, and to obtain a hearing for the following working hypothesis.

After the close of the Roman Period, Kent was attacked by Saxon pirates, some of whom settled dangerously near to Canterbury (Hersdon cemetery). These were the folk who had, at first, only hand-made pottery and cremated their dead. To rid themselves of these dangerous neighbours, and to prevent the coming of others, the British invited Hengist and the Jutes to Kent, making them a present of Thanet. This mistaken policy resulted in a serious and large-scale Jutish invasion, followed by settlements of the new-comers, soon to become openly hostile, in the territory that we have called the Kent I province. These folk knew how to make cast metalwork and understood niello-inlay, but they had no experience of work in cloisonné or enamel. Both these last crafts were practised by the Britons, who were relatively a magnificent, glittering people, retaining something of the old Roman culture, and were interested in the crafts of Gaul, and in touch with both Frankish and Gallic leaders. No Jutes were allowed to settle within the five-mile radius of Canterbury, but the invaders succeeded at an early date in blocking the chief lines of communication, except the all-important Dover road, along which the Britons still trafficked with the continent. To preserve this now vital route, federate Teutons (probably Angles, Saxons and Frisians) were introduced for the second time, these being mercenaries from the continent,²⁴ who were bribed by grants of land by the side of the Watling Street, where they founded settlements that perhaps included a substantial British population. In the graves of this folk we find pieces of British cloisonné and British enamel-work, together with a curious and miscellaneous assortment of

²⁴ The cemeteries are sufficiently warlike, though not such obvious burial-places of a warrior folk as Sarre. Sibertswold, for instance, has as many swords as Gilton-Ash. I may say that I regard (temporarily) the bottles in the upland cemeteries as coming from the Kent I culture.

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rather inferior Teutonic ornaments. At the same time we begin to see the influence of the British cloisonné on Jutish craftsmanship, and whereas at first this is illustrated chiefly by a 'disc-brooch' fashion in the Jutish chip-carving style, there soon appears work that deliberately imitates the jewels of the Britons, not merely in general appearance but in technique. Probably simultaneously a number of cloisonné brooches were made expressly in accordance with the Jutish taste, and by the time that the Jutish conquest was complete the cloisonné work was deliberately carried on under Jutish protection and control. Thus it comes about that, though the chip-carving ornaments occur much less frequently, and though all handiwork visibly and rapidly declined in excellence, yet the cloisonné craft was not extinguished. For example, when the step-pattern work of the continent had ceased to exert its influence, there is a faint response in Kent to the cloisonné novelty of the Cesena-type honeycomb cell, this happening before the Kentish expansion at the end of VI, when brooches in the later style travelled as far afield as Abingdon. In VII, on the other hand, when continental influence might be expected again to stimulate our English cloisonné jewellery, we find no response to the masterpieces of Monza or to the crowns. St. Cuthbert's pectoral cross is witness of the craft in the days of its decline, and we see no more of it in these islands until its brief and hesitating reappearance two centuries later on Scotie penannular brooches.

Iona

by O. G. S. CRAWFORD

IONA is a small island off the west coast of Scotland. It is famous throughout the world as the adopted home of Columba, the virtual founder of the Church of Scotland. It was in this island that he founded his monastery in 563 ; and it was from here that Aidan, the founder of Lindisfarne, came in 635 to christianize Northumbria. Thousands of tourists visit Iona every year, and are duly conducted round the ruins during the short hour or two allowed by the steamer's call ; yet how many realize that, of the remains they see, not even the oldest came into existence until about 500 years after the death of Columba ?

The church of Columba, as an independent virile organization, had a very short life. It received its death-blow at the Synod of Whitby in 664. But during the hundred years of its effective existence it accomplished the purpose for which it had been founded, namely, the conversion of northern Scotland. Christianity had been introduced into southern Scotland at least a century and a half before Columba. Ninian founded a church at Whithorn about 400 ; Cadoc the Welshman, a contemporary of King Arthur, of Gildas and David, revived the almost extinct Christianity of the lower Clyde region ; and Kentigern (born about 518) established it there upon a firmer footing, under the aegis of King Riderch of Dumbarton. There is even evidence that the influence of the Irish church penetrated as far north as Abernethy, south of the Tay estuary, during the second half of the 5th century.¹ But all attempts to prove that Christianity had penetrated further north before the time of Columba have failed. His missionary journey to the hill-fort of King Brude near Inverness, undertaken soon after 563, was a pioneer voyage of decisive importance ; for it brought the Northern Picts for the first time within the orbit of history.

But there is no need to discuss here the history of Christianity in Scotland, or the later fortunes of the Columban church. It will be

¹ Skene, *Chronicles of the Picts and Scots*, 1867, 6.

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enough to say that it is last mentioned in 1221, when the Annals of Ulster record the appointment of a lector in Derry. 'St. Columba was born in the year 521 ; and so, at the spot which he loved best in Ireland, and where he had built his first altar to God, after exactly seven hundred years the story of the Church which he founded comes to an end'.²

Last summer I visited Iona, and the following observations are the outcome of a few days' field-work there. It will be convenient to group them under certain headings.

WHERE DID COLUMBA LAND ?

Adamnan, the biographer of Columba, tells us nothing about the landing of Columba in Iona ; and the statement that he landed in a bay at the south end of the island has no better authority than a writer of 1701.³ His account is as follows :—

' This harbour is called Port-a-churich, from the ship that Calimkill and his associats came upon from Ireland to that place. The length of the curuchan or ship is obvious to anyone who goes to that place, it being marked up att the head of the harbour upon the grass, between two little pillars of stons,⁴ set up to show forth y^e samain,⁵ between which pillars there is three score of foots in length, which was the exact length of the curuchan or ship '.

Reeves adds that the ' bay is exposed to the western swell of the Atlantic, and is very dangerous except in fine weather '. I can confirm this by personal observation. Even in calm weather it would be difficult to beach a boat there, much less a ship with 13 people in it.

The mound referred to above is still there. It is 33 paces long and 8 paces wide, and seems to consist of large beach-pebbles. It is situated on a storm-beach within a few yards of high water-mark ; indeed the upcast beach-pebbles seem to be advancing slowly towards it from the west, and at the time of my visit (16 August 1933) the bare beach was

² Duke, *The Columban Church*, 118.

³ *New Statistical Account of Scotland*, vol. VII, 1745, part 2, p. 316 ; quoted by Reeves, p. 423 (from 'The Wodrow Manuscript, Advocates' Library, Edinburgh'). See also *Analecta Scotica* (Edinburgh, 1834) I, 114.

⁴ Compare the Viking boat-burials referred to in the Report of the Royal Commission (Scotland), 'The Outer Hebrides, Skye and the small isles', H.M.S.O., 1928, no. 686 (Island of Canna), p. 299, fig. 310.

⁵ *sic*, for ' same, in (between) ' ?

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only ten paces distant. The mound is well preserved except at the west end where it has been slightly disturbed. There are no traces of the 'two little pillars of stons'. Both the mound itself and the ground around are covered with a growth of fresh green grass, and there are signs of former cultivation. Immediately north of the mound are the remains of a dry stone wall running from a rocky eminence called Dun Laraichean to the inland cliff bounding the valley on the east side. At the head of the valley is at least one large round cairn.

It should be remembered that Columba came to Iona not direct from Ireland but from some part of the mainland, perhaps Cowall, where he had been to consult his kinsman Conall.⁶ There are many sheltered bays and landing places on the east coast of Iona, near the site of his monastery⁷; and there is no reason to doubt that it was at one of these that he disembarked. Whether the ship in which he and his twelve companions came was of skin or wood we cannot say. Wooden ships sailed those seas in Adamnan's time,⁸ but the capacities of coracles should not be underestimated.⁹

With the abandonment of the Port a' Churaich legend goes also that associated with Carn Cul ri Eirinn—the 'hill-back-to-Ireland'. It is said that Columba wished to live in a place from which Ireland could not be seen, and that on landing in the bay below (Port a' Churaich) he climbed the hill, and finding that Ireland could not be seen, decided to remain. The legend is backed by no ancient authority or inherent probability. Moreover, on the day of my visit I climbed it, I saw land which I believed to be part of Ireland on the southern horizon. It lay well to the west of the Paps of Jura and Islay; but I had no map with me and no other means of verifying the observation. It would probably have been the Inishowen peninsula. The same name occurs also in Colonsay and Mull.¹⁰ The word 'carn' in the name presumably refers to the hill itself. There is no trace of any cairn on the top of it except the modern Ordnance Survey cairn or beacon.

WAS IONA INHABITED BEFORE COLUMBA'S TIME?

Reeves considered that 'Columba probably found Hy [Iona] unoccupied and unclaimed'.¹¹ Adamnan's 'Life' contains no reference of any sort to any human beings on the island other than those

⁶ Adamnan, Lib. I, cap. 7 (Reeves, 32).

⁷ Reeves, 363.

⁸ Adamnan, Lib. II, cap. 45.

⁹ See Reeves, 169-70, 363, 423.

¹⁰ Reeves, 293.

¹¹ Reeves, 436.

PLATE I



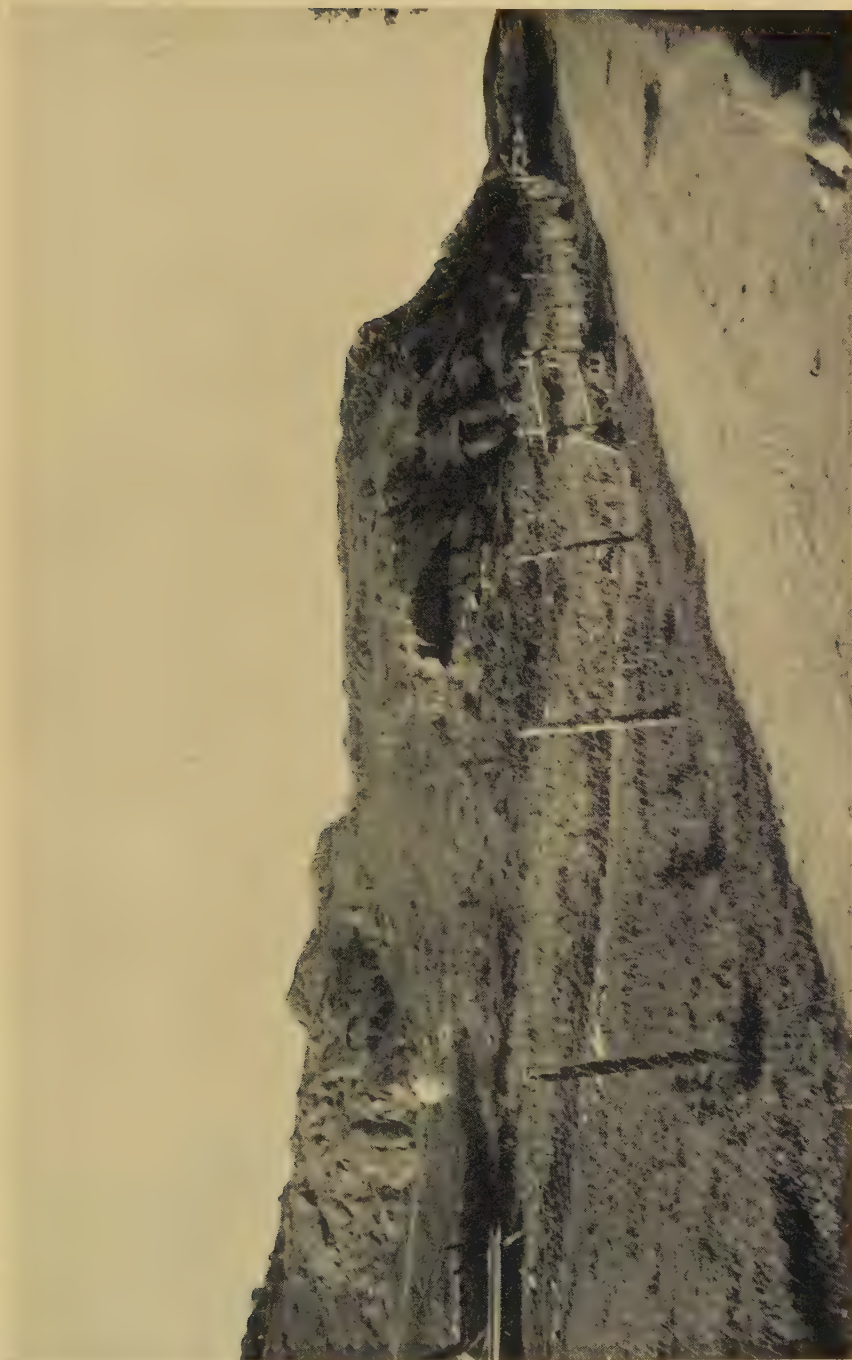
SITHEAN MOR OR CNOC AINGEAL, IONA, LOOKING SOUTHEAST; TAKEN FROM SITHEAN BEG. (See p. 459)
Ph. O. G. S. Crawford

PLATE II



THE VALLUM SHOWING ENTRANCE AND (ON ITS RIGHT, BELOW CATHEDRAL TOWER) THE REMAINS OF A HUT. (See pp. 461-3)
Ph. O. G. S. Crawford

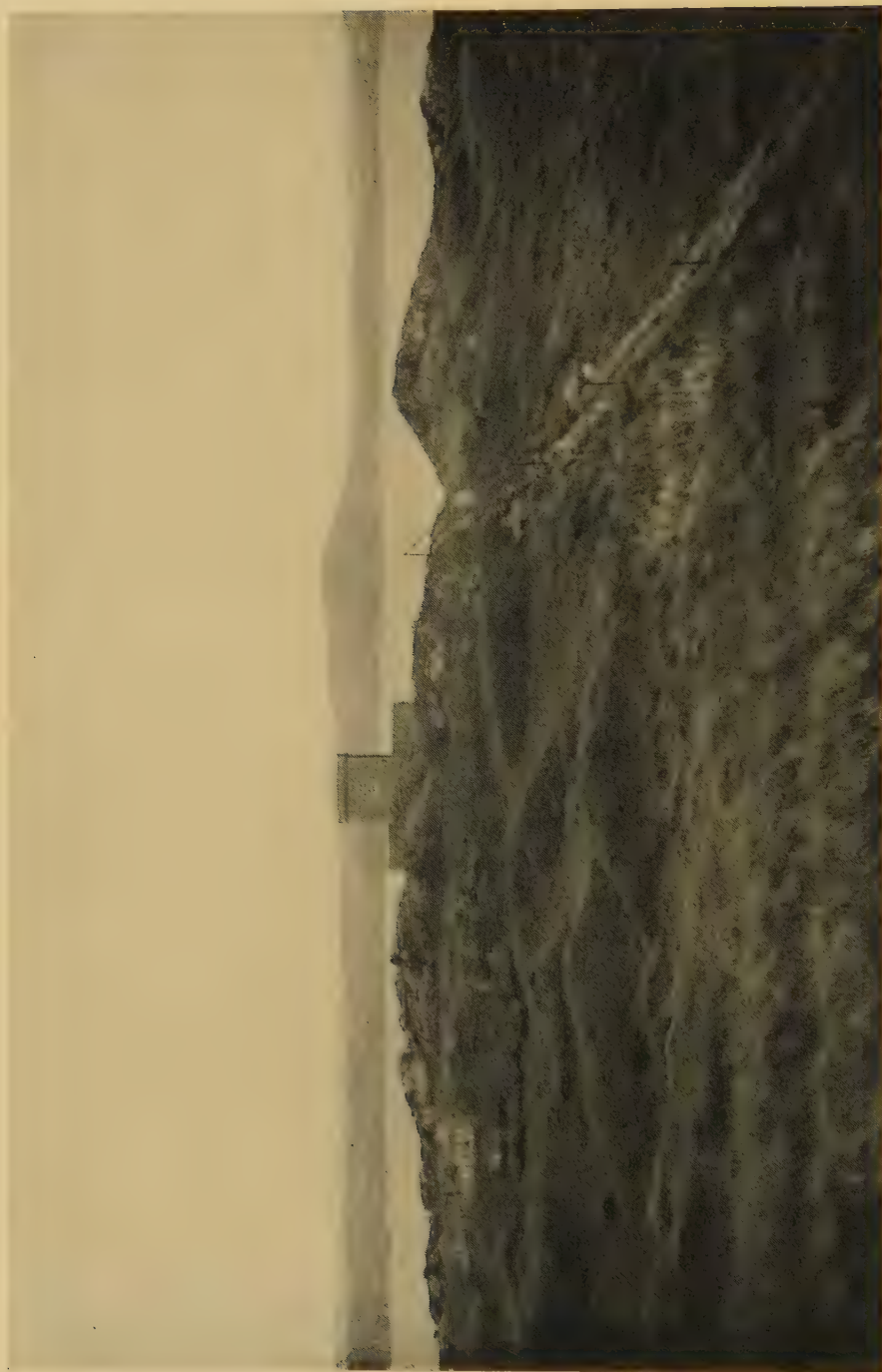
PLATE III



THE STEEP EASTERN EDGE OF CNOC NAN CARNAN FROM THE ROAD, LOOKING NORTHWEST. (See pp. 461-3)

Ph. O. G. S. Crawford

PLATE IV



THE VALLUM SHOWING REMAINS OF HUT AND, ON ITS RIGHT, CONTINUATION OF VALLUM TO EDGE OF HILL. (See pp. 462, 463)

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of Columba's monastery. Had such existed some contacts would surely have occurred and found their way into his account. No prehistoric objects have ever been found on the island, to my knowledge. There are however a certain number of sites, some of which have been claimed as pre-Columban. These must be examined; but in no instance is the claim justified on the existing evidence.

A little west of Port a' Churaich the Ordnance Map (Argyllshire 116 NE) marks 'Laraichean (in ruins)'. The description needs revision, for the word itself, spelt 'Lathraichean', is translated¹² as meaning 'ruins'. The remains consist of cairns, walls and enclosures of dry stone; they lie scattered about over an inclined grassy plain bounded on the south or sea side by a steep descent. The brow is apparently an old sea-beach, and I estimated it as less than 100 feet above the present high-water-mark. (It is incorrectly described by Reeves as an 'artificial terrace', p. 421). The date of these remains can only be determined by excavation; they may prove to be pre-Columban, but there is no reason at present to suppose that they are; and they should not be cited as evidence for a pre-Columban occupation of Iona until their age has been definitely proved. They may be quite modern.

Close by, at the head of the valley opening out on to the bay of Port a' Churaich, there are the remains of numerous small buildings and enclosures, and traces of former cultivation. The site is called Garadh Eachainn Oig, the garden of young Hector, and is said to take its name from Hector McLean, one of the Duairt family.¹³ There are other old enclosures to be seen between Loch Staonaig and Port a' Churaich, and evidences of former cultivation, but none of them is likely to be really ancient, much less pre-Columban. Prehistoric man had a lively sense of topography, and he is not likely to have settled in these remote untractable recesses of the island when the broad acres of the central plain lay open to him. Such spots would only have been brought under cultivation when the better regions were already occupied, that is, long after Columba's time.

A more likely candidate for pre-Columban antiquity is the hill Dun Bhuirg,¹⁴ round the summit of which, says Reeves¹⁵ are 'the traces of a parapet such as are often seen enclosing ancient forts in

¹² Ritchie, 1930, 32.

¹³ Reeves, 422.

¹⁴ On the Ordnance Map (Argyllshire 104 SE) it is called Dun only; but the adjacent valley is called Cul Bhuirg. Professor Watson tells me that 'bhuirg' is the Norse equivalent of the Gaelic 'dun'. ¹⁵ p. 107.

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Ireland and Scotland'. Unfortunately I did not know of this at the time of my visit, and so did not visit it. At Cul Bhuirg close by 'an old burying-ground was exposed some years ago (*i.e.* before 1857), in which layers of bones were found mingled with charcoal. There was no tradition of its existence, so that it had no name'.¹⁶ From the description it sounds as if this were more likely to have been some sort of a midden. It would be desirable to locate the exact spot, if possible, so that excavation may be made there to decide its age and true character.

A site called on the Ordnance Map Cladh nan Druineach, at Martyr's Bay, near the Free Church, has yielded 'bones' assumed (but not definitely stated) to be human. The name has been translated 'burial-ground of the Druids'¹⁷; but Professor Watson informs me that 'druineach' really means 'artificers'. There is thus no reason to suppose the site to be pre-Columban; but one would like to know more about the bones.

A quarter of a mile northeast of the cathedral is a spot named Cladh an Diseirt. Here is an enclosure about 20 yards square, at the west corner of which are two upright stones,¹⁸ about 4 feet high, evidently the gate-posts of the enclosure. There is a third, about 3 feet high, immediately adjoining on the north side; and the bank or wall of the enclosure itself contains others. I have little doubt that this is the site of Pennant's 'cromlech', though the printed accounts are confused and difficult to follow.¹⁹ There can however be no doubt whatever that the stones just described are part of the enclosure which, as its name implies, is of much later date. A few words may be said of it and the adjacent remains.

Within the enclosure are the remains of a building²⁰ whose walls

¹⁶ Reeves, 419.

¹⁷ Reeves, 418.

¹⁸ The material is granite, and is foreign to the immediate vicinity. They are probably erratics.

¹⁹ Quoted by Reeves, 418, from Pennant, III, 258.

²⁰ This apparently is the building referred to by Skene, *Celtic Scotland*, 1877, II, 298, note 58:—'It was carefully examined this summer (1876) by the author and Mr James Drummond, R.S.A., and some excavations they made disclosed the foundations of a rude stone oratory, about 26 feet long by 14 broad, the wall being two feet thick'. It is typical of the methods of the period that the only account of this 'careful examination' should be relegated to a footnote in an unillustrated book. Near here was found a 'heart-shaped granite boulder, 20 × 15½ inches, and having a cross with a nimbus rather rudely sculptured on it'. (James Drummond, in *Proc. Soc. Ant. Scot.* 1875, x, 615, fig. 2).

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are not parallel to those of the enclosure. From the east corner there runs a small cobbled road leading to Port an Diseirt. At the port are two parallel earthen banks, 8 paces long and measuring 7 paces across from crest to crest. When I found them I immediately guessed that they were for a boat, and since then Mr C. E. Stevens has informed me that such dry-docks are still used in the northern islands. All around are remains of dry stone walls which defy precise description, but which could and should be planned. To the south, a few yards from the first enclosure, is a small patch of ridge-and-furrow cultivation, perhaps the vegetable garden which was attached to hermitages.²¹ The whole suggests that it is what it professes to be—the hermitage attached to the monastery. Of the age of the remains now visible it is not possible to be sure, but we can infer the existence of a hermitage at Iona in 747, when an anchorite held the abbacy.²²

On the south side of the road to the Machar, and now to the golf-links, is a green grassy mound called on the Ordnance Map Cnoc an t-Sithein (PLATE I). Close by on the south is the farm of Shian. According to Reeves it was 'commonly called Sithean Mor' in his time (1857). It is generally, and probably correctly, identified with Adamnan's Colliculus Angelorum or Cnoc Aingel.²³ Pennant has the following interesting account of it²⁴ :—

'On the right hand, on a small hill, a small circle of stones, and a little *cairn* in the middle, evidently *druidical*, but called the *hill of the angels*, Cnoc-nar-aimgeal (*sic*) ; from a tradition that the holy man had there a conference with those celestial beings soon after his arrival. Bishop *Pocock* informed me, that the natives were accustomed to bring their horses to this circle at the feast of St. Michael, and to course round it'.

Certainly this seems much more substantial evidence of heathendom than most of what we have met with up to now ; but I think there must be some confusion. The mound is as smooth as a billiard ball (see PLATE I), and there are no traces of boulders anywhere near. It is difficult in any case to understand how there could have been room on the top of it for a circle of stones and a *cairn*. The mound itself is plainly of natural origin, as is the other, Sithean Beg, in the opposite field, which has pieces of natural rock protruding from it.

²¹ *e.g.* to that of Kells, in 1084 ; Reeves, 366, 367.

²² Reeves, 366, on the authority of the Book of the Four Masters.

²³ Codex D, 13th century, reads 'Cnocan na naingheal'. Reeves, 218.

²⁴ III, 258, quoted by Reeves, p. 423 (edition of 1790, vol. I, p. 298).

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In the late Irish life of Columba there is a story which, if true, would prove that Iona was inhabited when Columba arrived. It is as follows :—

‘ Then he went in cheerful mood, and came to the place that is called today Iona of Columcille. He arrived there on the night of Pentecost. Two bishops that were in the land came to send him away from it. But God revealed to Columcille that they were not really bishops ; therefore they abandoned the island to him when he related to them their history, and their true performances ’.²⁵

But no reliance can be placed upon so late a document as this Irish life, which has little or no historical value. It is most improbable that Christian bishops would have been found in an island that was barely within the sphere of influence of the Dalriadic Scots, whose Christianity indeed was never much in evidence at this early date.

The case of Cnoc nan Carnan will be considered below.

We see, then, that the evidence for pre-Columban inhabitants of Iona is quite inadequate. Even should proof of prehistoric habitation come to light later on, it would not prove that the island was inhabited when Columba arrived. It might well have been inhabited during some periods and not in others.

WHERE WAS THE EARLIEST MONASTERY ?

A more important problem is the site of the earliest monastery. The buildings which are now admired by visitors all belong to the 11th and later centuries. Not one of them is in any way associated with Columba or even with his church, whose headquarters had been moved from Iona to Derry in Ireland in 807, on account of the Danish raids.

One important piece of evidence has been almost completely ignored. It is well known that the early Celtic monasteries usually stood within some kind of protecting rampart or vallum, constructed for the purpose of separating the monks from the outer world and probably also as a defence in case of attack. Such ramparts existed at Durrow, Lindisfarne, Armagh, Clonmacnois and Iona.²⁶ Adamnan refers to this rampart once only,²⁷ but that is enough to prove its

²⁵ A. O. Anderson, *Early Sources of Scottish History*, 1922, I, 45.

²⁶ Reeves, 24, 143, 361 ; Clapham, *English Romanesque Architecture before the Conquest*, 1930, 51 ; references cited in both instances.

²⁷ Adamnan, Lib. II, cap. 29 ‘ Nam idem frater, vallum egressus monasterii ’ . . .

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existence in his time and presumably therefore in the time of Columba also. Later writers dismiss it in a few words. Pennant mentions it;²⁸ and from a further statement of his that 'the whole of their religious buildings were covered on the north side by dikes' we may infer that the remains were more perfect in his day than now. Actually the portion on the 'narrow flat' is still fairly well preserved, and seems to have suffered no damage since Pennant's visit. It runs in a NNE-SSW direction along a grassy ridge—which is a raised beach—on the west side of the road, between Clachanach and Cnoc nan Carnan (see accompanying map). It is best preserved at the north end. The rampart is now double, but I doubt very much whether this was an original feature. There are slight remains of a bank on the counter-scarp. The rampart crosses the road and can be traced quite plainly across a large field, formerly arable, up to the small inland cliff which it reaches one furlong NE of the cathedral. Southwards along the 'narrow flat' the rampart becomes less easy to follow for some yards, but there are traces both of it and its accompanying ditch and counter-scarp-bank as far as the mill-stream (Sruth a' Mhuilinn). South of the stream it is again well preserved, and here it has, I believe, not been previously noticed, or at any rate recorded. (PLATE II). But it is here that it becomes most interesting, for it passes along the western brow of Cnoc nan Carnan and curves round it till it reaches the precipitous eastern edge overhanging the road immediately opposite St. Oran's chapel. (PLATE III). Beyond this I did not trace it, but it is probable that originally it continued to the above-mentioned little inland cliff, along which it may have continued northwards (using it as a good natural aid to defence) till it met the portion first described.

On Cnoc nan Carnan it is plain and very well preserved. There is a gap here, certainly original; and on the south side, apparently in the bank itself, the remains of a round enclosure, evidently a hut. (PLATE IV). We shall return to this. North of the entrance the top of the rampart is 7 or 8 feet above the bottom of the ditch (which stands out because of the wild flags growing thickly along it). Southeast of the entrance the rampart becomes double. One portion curves round the hill at once (height about 6 feet), the other continues a little further south before turning east; both alike end on the precipitous eastern brow of the hill.

²⁸ III, 258. 'North from the granary extends a narrow flat, with a double dike and foss on one side, and a single dike on the other' (edition of 1790, vol. I, 296).

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From the north side of the entrance there runs a scarp which seems to be in part artificial ; it ends at the steep northern brow of the hill.

There is thus a rocky fort forming a defensive nucleus within the great enclosure itself. There are suggestions of dwelling-places within this fort, in the form of smooth turf-grown hollows ; but similar hollows also occur naturally, and these may be the same.

The interesting question arises, was this a prehistoric—that is, a pre-Columban—fort, or, if not, what was its relation to the Columban monastery ? The vallum or rampart may be accepted without question as that surrounding the original monastery, which must therefore be located on the site of the cathedral or somewhere very close to it.²⁹ We are now therefore in a better position to identify the various eminences referred to by Adamnan in its immediate vicinity. The passages in question run as follows :—

1. [Columba] in cacumine sedens montis qui nostro huic monasterio eminus supereminet (Reeves, p. 58).
2. Vir sanctus in tuguriolo suo scribens sederet . . . Duo vero fratres ad januam stantes . . . (p. 216).
3. Duo vero viri, qui eadem hora ejus tugurioli ad januam stabant, quod in eminentiore loco erat fabricatum ' . . . (p. 227).
4. [Columba] monticellum monasterio supereminentem ascendens . . . de illo descendens monticellulo, et ad monasterium revertens, sedebat in tugurio Psalterium scribens . . . (p. 233).

There are only three heights which could be described as overlooking (*supereminens*) the monastery (1) The hill now called Dun I, (2) Cnoc nan Carnan, (3) Torr nan Aba (called by Reeves Torr Abb, which he translates ' Abbot's pinnacle '). (1) Dun I may be eliminated at once ; it is more likely to be the Munitio Magna of Lib. II, cap. 4.³⁰ (3) Torr nan Aba is probably the ' monticellum ' or ' monticellulum '

²⁹ Reeves came to the same conclusion on, apparently, slightly different grounds, 361.

³⁰ Only from this hill of all the three could Columba have seen a rain cloud advancing over the sea from the north ; on the other hand ' munitio ' is usually applied by Adamnan to hills with artificial forts on them, such as those of Brude (Reeves 73, 150), ' munitio Cethirni ' (pp. 91, 93), ' munitio de Broichano ' (p. 147). Probably it is, as Reeves suggests, simply a translation of the word ' dun ' which elsewhere usually (but not always) has this meaning. There are no traces of any fort on Dun I, and it is certain that no such fort ever existed there.

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of the fourth extract above. Torr nan Aba is a very small hill, and therefore suits the diminutive used. It is unlikely that an old man at the point of death would have climbed to the top of Cnoc nan Carnan, nor would it be so easy to make himself heard to the monks below as it would be from the smaller hill. Moreover, the present name may well have been derived from the impressive occasion here described. It is in any case too small to have even a 'tuguriolum' built upon it.

We are left therefore with Cnoc nan Carnan as the site of Columba's 'tuguriolum'. Can this be identified with the round enclosure mentioned on p. 461? (PLATES II and IV). It is the only object now remaining on the hill that fits Adamnan's description, but it fits it remarkably well. Here indeed is a site that should be excavated—but by a super-expert, and with a pen-knife! So far as I know it has never even been noticed by anyone before. Indeed the hill itself is only once referred to by the other writers, though in a most intriguing way:—'At a little further distance is *Dun Ni Manich*, i.e. *Monk's-Fort*, built of Stone and Lime, in form of a Bastion, pretty high. From this Eminence the Monks had a View of all the Families in the *Isle*, and at the same time enjoy'd the free Air' (Martin, *Western Isles*, 1716, p. 259).^{*} Reeves, who quotes this passage (pp. 423, 4) adds: 'the artificial part does not now exist'. Reeves was a scholar of the highest rank and his book is a model of what such a book should be; but he lived before the days of field archaeology. So too did Skene, whose account of the site is fuller in some respects than Reeves's, but adds little to our knowledge of it.³¹

Columba was born sixteen years before the reputed death of King Arthur; and he died in the year that Augustine landed in Kent. In an age of unsubstantial wraiths he alone stands out as a real man of flesh and blood. That is why Iona, his adopted island-home, is of such paramount interest to us. The historians, and above all Reeves, have not neglected their opportunities, and it is time that archaeologists should enter the field.

^{*} Immediately after this Martin says:—'A little further to the West lie the black Stones, which are so call'd, not from their Colour, for that is grey, but from the Effects that Tradition says ensued upon Perjury, if any one became guilty of it after swearing on these Stones in the usual manner; for an Oath made on them was decisive in all Controversies'. I do not know to what stones he is referring; perhaps someone with local knowledge may be able to discover them?

³¹ *Celtic Scotland*, 1877, II, 299.

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NOTE I. 'THE NAME ' IONA '

In a masterly discussion of this name Professor Watson³² reviews the various early forms which are recorded. The following is merely a summary of his remarks :—

'The name of Hi (Iona) is always in Adamnan *Ioua insula*, whence by a misreading of *u* as *n* has come the popular form Iona. It is likely that the error gained currency, if it did not originate, from the remark of Adamnan on Columba's name, which he says is in Hebrew Iona (Jonah), a dove'. There are two sets of old forms. Adamnan's *Ioua insula* is a latinization, formed in the same way as his *Egea insula* (Eigg), *Scia insula* (Skye). With this form go the forms *Eu*, *Eoa* (adjective), *Eo*, *Euea insula*, which come from the older Celtic word *Ivo-*, meaning 'yew'; this occurs in the compounds *Ivacattos* (genitive), *Ivageni* (genitive), and in the Gaulish words *Ivo-magus*, *Ivorix*. 'Adamnan's adjective *Ioua*, however, seems to go back, not exactly to *Ivo-*, but to a derivative *Ivova*, which might mean "yew-place", with which we may compare the Gaulish *Ivavos*, the local god who was the genius of the healing wells of Evaux in France'. (Dept. Creuse).

Professor Watson concludes :—'The inference to be drawn from the whole data is, in my opinion, that the "Iouan island", otherwise *Eo* or *Eu*, means "the Yew-isle", and that it may well have been the seat of a yew cultus . . . In this connection it is relevant to note the tradition of the Irish life that Columba found druids before him in Hi, and expelled them'.

Alongside of these forms is another whose nominative occurs as *I*, *Hi*, *Ia*, pointing 'to an old *Ivia*, a shortened or reduced form of *Ivova*; compare *Britannia*, *Brittia* . . . that these forms are contemporary with the series *Ioua* (adj.), *Eo*, *Eu*, appears from Bede's *Hii*, *Hy*, and from the still older *ad Segienum Hiiensem abbatem* of Cummian's epistle, A.D. 634'.

The form *Hi* occurs in the Book of Leinster ('about 1150') in a passage relating to 'a period long before Columba's time'.

To the above I have only one remark of my own to add. *The New Statistical Account* (1845, VII, 313) says that 'to the Highlanders of the present day, Iona is known as "Innis-nan-Druidhneach", or the island of the Druids'. Is it not probable that 'Druidhneach' is a corruption of 'druineach', craftsmen? It might have reference to the industry of

³² *Celtic Place-names of Scotland*, 1926, 87-90.

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stone carving, which, to judge from the remains of crosses and sepulchral slabs, existing and recorded, must have reached large proportions in Iona.

NOTE II. THE LEGEND OF ORAN

St. Oran's chapel is generally attributed to the 11th century, and, if correctly so, it is the oldest building on the island. It is not known, however, who Oran was, and his name occurs nowhere in Adamnan's life. The later and much less authoritative Irish life of Columba contains, however, a very queer legend about him which may be quoted first from the picturesque version of Pennant (1790, I, 286-7).

'The chapel of St. Oran stands in this space, which legend reports to have been the first building attempted by St. Columba; by the working of some evil spirit, the walls fell down as fast as they were built up. After some consultation it was pronounced, that they never would be permanent till a human victim was buried alive: Oran, a companion of the saint, generously offered himself, and was interred accordingly: at the end of three days St. Columba had the curiosity to take a farewell look at his old friend, and caused the earth to be removed. To the surprise of all beholders, Oran started up, and began to reveal the secrets of his prison-house; and particularly declared, that all that had been said of hell was a mere joke. This dangerous impiety so shocked Columba, that, with great policy, he instantly ordered the earth to be flung in again; poor Oran was overwhelmed, and an end for ever put to his prating. His grave is near the door, distinguished only by a plain red stone'.

The Irish account is more bald, and does not contain the part about hell. 'Then Columcille said to his community: "It were well for us that our roots should go into the ground here". And he said to them, "It is permitted you that some one of you should go into the ground of this island, to consecrate it". Oran rose up readily, and spoke thus: "If I should be taken", said he, "I am ready for that". "Oran", said Columcille, "thou shalt have reward for it. No prayer shall be granted to anyone at any grave, unless he first make it to me". Then Oran went to heaven. Then [Columba] founded the church of Iona'.³³

³³ A. O. Anderson, *Early Sources of Scottish History*, 1922, I, 45; quoting from Whitley Stokes, *Lives of the Saints from the Book of Lismore*, p. 30 [Anecdota Oxoniensia, Medieval and Modern Series, part 5, Oxford, 1890].

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NOTE III. LOCHAN MOR AND IOMAIR AN TACHAIR

The lake was already drained in 1772 when Pennant visited Iona (*Tour in Scotland*, 1790, I, 296). Formerly it served to work a mill situated, according to local tradition, at the point where the stream (Sruth a' Mhuilinn, mill-stream) leaves it, which is also the point where the stream is crossed by the Vallum of the monastery. From this point also there starts a broad flat rocky causeway called Iomair an tachair, ridge of the causeway. This has been described by several writers, but none of them appears to have realized its character or purpose, namely, that it was made to dam the waters of the lake so as to serve the mill. This would seem so obvious as hardly to need stating. The causeway itself closely resembles a Roman road, both in structure and dimensions; and it may have been used as a road across the lake; but it leads only to the moorland and must have been designed for some other purpose. There is no evidence to indicate its age. We may infer the existence of a mill in Columba's time, though Adamnan nowhere specifically mentions one, nor is there any evidence that it was driven by water-power.³⁴ There was a water-mill at the abbey of Fore in Ireland, built by St. Fechin, 'who flourished in the interval between Columba and Adamnan' (Reeves, p. 362, quoting St. Fechin's Life in Colgan, *Acta Sanctorum*, p. 131). For further notes on Lochan Mor and Iomair an tachair, see Reeves, pp. 422, 424.

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³⁴ Adamnan mentions a cross stuck in a quern (molari infixi lapidi); but this was probably a wooden 'staff-rod' (the name and suggestion are the late Mr W. G. Collingwood's, see his *Northumbrian Crosses*, 1927, p. 5).

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NEW TECHNIQUE (PLATES I-II)

During the last twenty years archaeologists have made remarkable progress in the application of modern scientific technique to ancient remains. Both in museums and in the field new methods have been devised for extracting evidence from unpromising material, and for preserving decayed objects. Papyri that have been burnt or buried in mud have been unrolled and read¹; clay tablets that were little more than mud themselves have been restored; palimpsests that were quite illegible to the naked eye have been read and photographed by ultra-violet and infra-red light. Chemical skill combined with craftsmanship has made good the havoc of time in restoring objects from the tombs of Queen Hetepheres and Tutankhamen, and from the Royal Tombs of Ur; and in our own country has turned the battered plunder of Traprain Law into a magnificent museum exhibit. Even ordinary photographic technique (in lighting and arrangement) has advanced considerably (though there are still dark places left in the provinces).

Out of doors, the invention of air-photography needs no more than a mention in ANTIQUITY. The preservation of ancient buildings being carried out by the Ancient Monuments Branch of H.M. Office of Works has now to its credit such achievements as Richborough, Old Sarum, Belas Knap, Bryn Celli Dhu, Skara Brae, and innumerable castles and abbeys. The search for post-holes, almost unthought of before the war, is now a regular feature of every excavation. So too is the employment of 'bosing'² as a preliminary to excavation, to reveal buried ditches. Moonlight photography is Dr Cecil Curwen's latest contribution to technique (see pp. 476-7).

The use of what may be called the 'horizontal section' is one of the recent additions. It consists of scraping the top of an original

¹ An interesting account of Professor Ibscher's work on the Manichean papyri (dated A.D. 350-400) found in the Fayum is printed in *The African World*, 30 September 1933, pp. 338-9.

² See ANTIQUITY, 1930, IV, 30-1.

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surface-level and reading thereon the pattern revealed. It is an exact replica of the time-honoured method of reading the vertical section of a trench, to discover evidence of stratification or of structural features. The horizontal section has long been known, of course, and more or less crudely employed. I used it myself before the war (under Dr Reisner's guidance) to discover from which of several levels in a

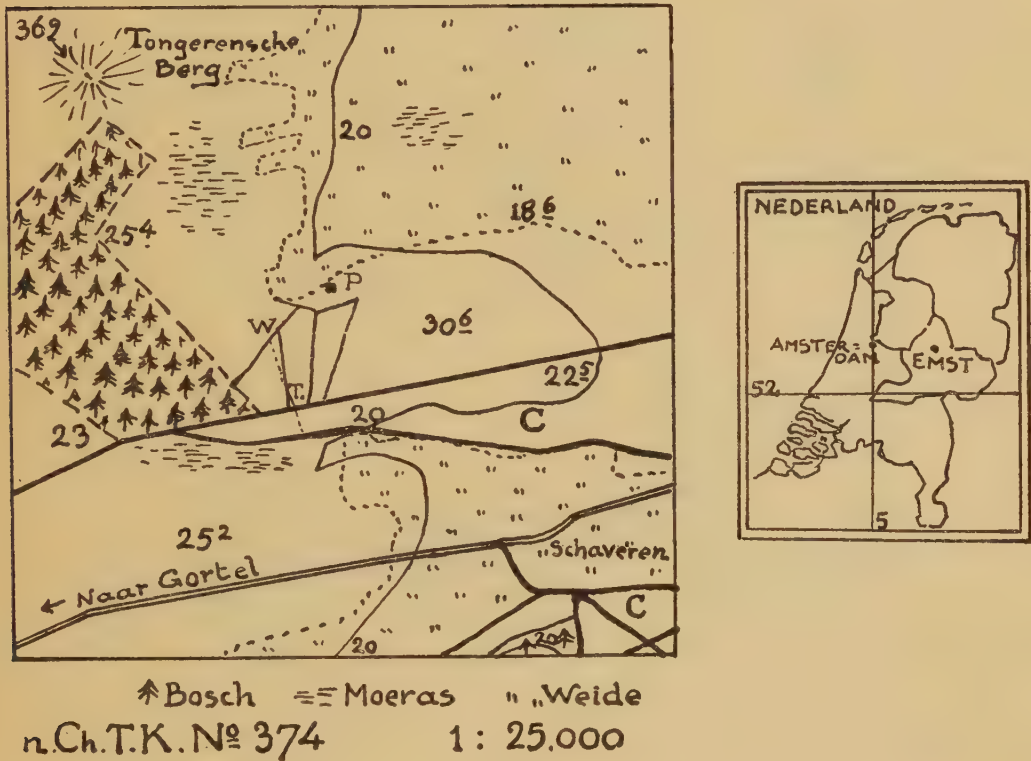


FIG. 1

stratified site certain graves had been dug. I used it again in Wales to discover a grave in a stone circle, where acids in the soil had completely destroyed the bones (if any).³ And of course it is virtually the method employed everywhere to reveal post-holes and pits. The post-holes in the Neolithic village near Cologne were all revealed by the horizontal

³ See *Archaeologia Cambrensis*, 1920, ser. 6, XX, 112 (Circle s, plan).

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section ; the wood had completely decayed, leaving only a dark spot or stain in the soil, which in this case was a fine *loess*. It is in soils of this kind that the horizontal section reveals most, and it is just in these fine-grained soils that Britain is most deficient. (They occur, however, in the Fens of East Anglia, and it is good to know that Dutch methods

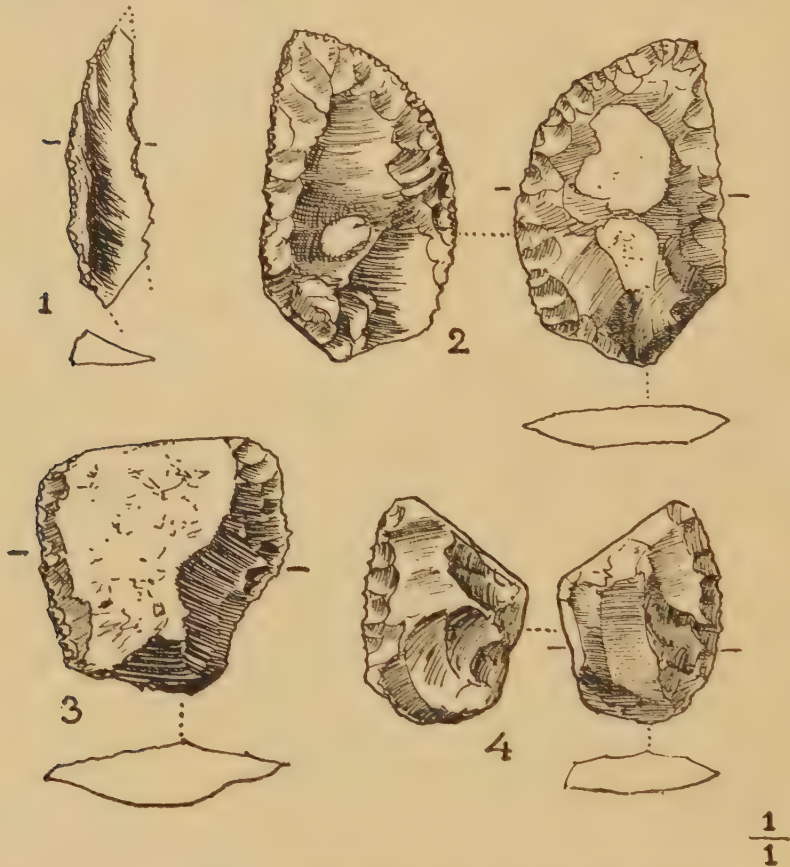


FIG. 2. IMPLEMENTS FROM TONGERENSCH BARROW, EPE EN OENE

are to be employed there—not the first instance of Dutch influence in that region).

But by far the most striking discovery hitherto revealed by the horizontal section has been made by Mr Butter in a Dutch barrow called Tongerensche Berg, in the parish of Epe en Oene, province of

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Emst (FIG. 1). Here the actual outlines, or silhouettes, of two skeletons were revealed by careful scraping of the soil, although all trace of bone had disappeared. The illustrations here reproduced (PLATES I-II) tell their own story. The L-shaped blocks are not, as might at first be imagined, slabs of stone, but merely portions of the soil which have been cut into this shape by the excavator. On their surface the skull and limb-bones can plainly be discerned by the dark markings in the soil. In one instance (PLATE II) the body was buried in a crouched position, and with it were found the four flint implements here reproduced (FIG. 2). It was even possible to make certain measurements (occiput-glabella 21 cm., femur, about 51 cm., length of vertebral column 60 cm.). The other silhouette was the remains of an extended burial. Higher up in the same barrow were two cinerary urns of a later date containing burnt bones. The silhouettes represented primary burials on the one surface-line. Another barrow almost touching yielded a beaker,⁴ and Mr Butter assigns both barrows, and therefore also the silhouettes, to the Beaker period (*i.e. circa 2000 B.C.*).

On the hill nearby (30.6 on the sketch-map) is a cup-marked stone ; and about 50 yards from the barrows is a bank and ditch about 200 yards long, running from marsh to marsh across high ground. At its western end the ditch had three rows of wooden piles in it ; and it may be suggested that it was a defensive earthwork of the same type as we are familiar with in this country.

One of the silhouettes was removed to a museum, but the image faded away. (This suggests that relative dampness is one of its ingredients). Mr Butter hopes to build a shelter on the spot. He adds a hint that excavators should watch for similar silhouettes when exploring open-air sites of the palaeolithic period. We would reinforce this suggestion ; the method is only applicable of course to soils in which bone is dissolved ; obviously it is not required when bone is preserved. But soils with this action are fairly common.

The foregoing account is partly derived from one by Mr Butter, transmitted to us through the agency of Mr Grahame Clark, to both of whom we wish to express our thanks for the news of a strange and interesting discovery.

O.G.S.C.

DOLMEN-FIELD IN TRANSJORDAN (PLATES III-V)

Crossing the Jordan by the Damieh ford, the road shortly passes south of a high Bronze Age tell, climbs the steep bank to the fertile

⁴ van Giffen, *Die Bauart der Einzelgraber*, plate 118, no. 14.

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level and eventually mounts the foot-hills to Es Salt. On these, between this road and the river Zerka, lies a field of roughly a hundred dolmens,¹ covering an area about two kilometres long, gently rising to the east. They are scattered over its length and are of differing types and characters ; from the prised-up slab, propped with a small column of three courses, to the complete cist type, built of five separate heavy stone slabs, the sides projecting beyond the front. The larger number are surrounded by a circular wall, in varying stages of decay—originally the height of the dolmen—intended to hide it completely, and built of long, thin, unhewn stones of approximately equal sizes.²

These dolmens are in some respects reminiscent of rock-cut tombs in Palestine, North Africa and Majorca.³ A striking feature is the door plugged with a square stone (PLATE IV) suggesting a comparison with the cist-dolmens of North Caucasia, closed by a round stone disc,⁴ and attributed to the first period of the second millennium B.C. Tallgren suggests that the Caucasian dolmens 'represent an oriental type of grave, developed and existing in the east at a very early period'. They also recall, even more vividly, the rock-cut tombs of the Mediterranean region, from Palestine to Sicily and Majorca, whose entrances were closed by a stone or wooden door (compare also the stone in front of the Holy Sepulchre).

Near the bank of the Jordan, a few kilometres south of the Damieh dolmen-field ridge, is a circle about 100 feet in diameter, outlined by rough boulders protruding about six inches above the soil. Exactly similar circles with intrusive cist-graves occur 30 miles away in the dolmen area, in the Wadi Ain Musa below Mount Nebo, where excavations of the cist-graves conducted in 1933 by M. Stikelis, of the Hebrew University, Jerusalem, have proved to be the necropolis of Tell el-Ghassul. This was a 'city of the plain' of four different periods, showing the transition from Neolithic to Early Bronze of about 3000 B.C.⁵ It is premature to claim that the Wady Damieh dolmens are of the date of the Ain Musa cist-graves (the Ain Musa dolmens being poorly preserved and not yet excavated); but it is

¹ Described by Irby and Mangles, *Travels in Egypt and Nubia, Syria and Asia Minor during 1817 and 1818*, p. 325, and in *Revue Biblique*, 1910, pp. 530-6.

² See plate III, p. 480. See ANTIQUITY, 1929, III, 491 ff. for parallels from India.

³ See *Archaeologia*, 1927, LXXVI, 121-60, and *The Antiquaries Journal*, January 1933, p. 23.

⁴ Tallgren, 'Dolmens of North Caucasia', figs. 2 and 7. ANTIQUITY, June 1933.

⁵ Excavated by Père Mallon of the Pontifical Institute, Jerusalem.

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tempting to suggest that the dolmen-fields in the Jordan valley may be the forerunners of those in North Caucasia.

The trilithon dolmen-façade is erected in Transjordan today, as a low entrance gate to a grave-circle,⁶ or as a free-standing altar-tomb or 'ghost door' over the resting-place of many a holy man (PLATE V). The Arab mourner faces east; kisses the top stone, places his forehead upon it, and deposits a gift. Many are the objects resting on the altar-table, which gradually drop down and accumulate upon the grave itself. The example illustrated, at Deir Elyat, near Jerash, is of unknown date and smothered in useless ironmongery.

GEORGE HORSFIELD.

Director of Antiquities, Transjordan.

LOAM-TERRAINS

Dr CYRIL FOX, Director of the National Museum of Wales, writes:—

'I am much indebted to Messrs Wooldridge and Linton for their appreciative study, in "Loam-Terrains of Southeast England" (ANTIQUITY, September 1933, pp. 297-310), of the theories and views expressed in the *The Personality of Britain* on the relations between soil and settlement. Their insistence on the existence, and importance of, a class of soils intermediate between my pervious and impervious groups, is timely and valuable. I wish, however, I could be as convinced as they are that these soils are really "*intermediate*" (p. 299) and so definable as a group, and not "*gradational*". Some of them I have, as a matter of fact, classed with my porous soils, others with my clays. Indeed, I regard one of these authors' "loam terrains" (see their map, p. 301) definitely as an area of secondary settlement (*e.g.* an impervious area carrying "damp" oak wood), and cannot yield it without a struggle! Hence this note. I refer to the boulder-clay-covered plateau of Essex and Suffolk. Loams are, in the authors' words, "easily worked soils", but I venture to suggest the soils of this area cannot be so described. Any one who, like the writer, has tramped them in all seasons can say that if these are not, taken as a whole, stubborn, waterholding, clay soils, none is!

'It is true that the authors describe these Suffolk-Essex-Herts soils as "tending to show a higher clay fraction" than their characteristic "loams"; and as "locally approximating to the true heavy

⁶ See Conder, *Heth and Moab*, p. 330.

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clay type " (p. 302). Again, they remark " to the north of the lighter Essex boulder-clay lies the heavier Kimmeridgic variant of Suffolk, a region much less tractable under axe and plough, and no doubt serving as a natural barrier " (p. 306-7). And yet, despite such phrases, they mark the whole of these lands on the map as being in their "*intermediate*" group, just as they do the sandy loams which occur on the Lower Greensand region of the Weald. Such a classification, whatever its justification in chemical analysis, confuses rather than clarifies the problem of the relation of soil to settlement, and so—I venture to think—is really not of practical value.

' Nor can I find in Vidal de la Blache's description of the *loess* and related (*limon*) soils in France—to which the author refers—any justification for the inclusion of such clayey lands in a similar category. The *loess* (he says¹) is light yellow and of a dusty, friable texture ; while the beds of loam (*limon*) of the Paris Basin, resemble *loess* in their essential properties. In these soils (he adds) trees are unable to root securely owing to their friable character.

' I should add that no real support for the view that the Essex-Suffolk boulder-clay country was sought by Early Man comes from my massed Bronze Age map ; it is hardly correct to say that it shows " evidence of considerable occupation " (p. 304). The fault probably is mine—or rather the small scale of my map. In the first place *isolated dots*—which are all that occur in these areas—are of little importance comparatively.² In the second place, most of such dots as do occur in the boulder-clay zone, are on the flanks of the river valleys which dissect it and wherein gravel terraces, or exposure of the underlying chalk, tend to occur ; and are not on the clay-covered plateau itself. I shall be glad to meet Messrs Wooldridge and Linton in London and show them large-scale distribution maps of the area, which are being prepared for me by Miss L. Chitty.

' In my opinion the Essex-Suffolk upland forms one of the best examples we have that impervious soils were not suitable for early settlement, since for 1500 years (the whole of the Bronze Age) a zone

¹ pp. 48-9 of the English translation : *The Personality of France*, Knopf, 1928.

² ' It is true that occasional finds do occur in such regions as these ; but scattered dots mean little on such a small-scale map as ours, where hundreds of finds in the thickly occupied areas fail to be recorded for lack of space '. *Personality of Britain*, p. 59. It should perhaps be added that the belt of finds on the Bronze Age map which crosses the Suffolk upland, from Ipswich to the Bury St. Edmunds district, follows a gravel and chalk-floored corridor.

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of dense settlement bordered it, but did not effectively expand into it. That this clayland was less cold, dense and stubborn than the adjacent London Clay is probable; it is none the less an area of secondary settlement.

‘Valuable evidence as to the essential character of this upland is provided by ecological botanists. Miller Christy, discussing the distribution of *Primula elatior* in Britain,³ remarks that it only flourishes on a clayey soil and that one of the two districts in East Anglia which it occupies is the Essex-Suffolk boulder-clay-covered plateau under discussion, its range extending from Hatfield Broad Oak in the south to Bury St. Edmunds in the north.

‘To sum up. We have no soil with clearly defined characteristics such as *loess*, and our loams fade on the one side into sands, on the other into clays. A proportion, probably large, of these loams is best classed with the pervious or the impervious soils, according to which end of the scale each individual deposit may lie, for the purposes of research on human colonization. Having said this I will readily admit that there is an important residue which requires special consideration, and that I have neglected it. For example, certain “boulder-clay” areas of *Norfolk* certainly provide the class of soil which the authors describe as loamy; I was in a difficulty as to how to deal with them, but now know the way. The authors are also doubtless correct in ascribing the dense occupation of the Thames valley floor in the Bronze Age in part to the presence of “cultivable loams”. It is worth enquiring whether such loams are used for occupation or tillage. I suspect the latter, save in limited areas and periods (*e.g.* Hertfordshire in the Belgic phase).

‘Considering the matter in its broadest aspect, I doubt whether on small-scale maps, and in dealing with prehistoric and early historic periods, the plotting of an intermediary soil-group is desirable; but attention should be drawn in all future work on soil and settlement to the significance of loams as affording a bridge leading incipient agriculturists from the pervious to the impervious groups.

‘Other points made in the article are valuable and interesting; particularly the neglect by Early Man of the poorest—sandy—soils. I agree that these were definitely the least attractive of all the porous soils to him. In closing I reiterate my indebtedness to, and appreciation of, the authors’ contribution to studies which are of equal interest to geographers and archaeologists’.

³ *Journal of Ecology*, 1922, x, 200 ff.

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ARCHAEOLOGY BY MOONLIGHT (PLATE VI)

Dr E. CECIL CURWEN writes :—

‘ It sometimes happens that an emergency excavation becomes necessary in the middle of winter when the altitude and power of the sun is not sufficient to enable adequate photographs to be taken of the various features of the work in progress. Important post-holes, for example, must be recorded photographically, and such photographs must be of a kind that the beholder who has not seen the actual excavation may recognize them for what they are. In the writer’s experience the only satisfactory way to photograph post-holes is to fix the camera to the top of a 12 or 15-foot ladder which has been lashed to two other poles so as to form a tripod. The photograph should then be taken *against the sun* in order that the greatest amount of shadow may be visible on the walls of the holes to contrast with the surface of the undisturbed ground. Fogging or halation will not occur because the camera is looking obliquely downwards—say at about 45 degrees—while the sun is also looking (as it were) obliquely downwards at a similar angle from the opposite direction, so that actually the camera will be pointing in a direction approximately at right angles with the source of illumination.

‘ This is all very well with a strong midsummer sun. But it so happened that in the middle of last winter the writer found himself in charge of an emergency excavation of a Neolithic camp at Brighton, previous to part of it being levelled for the race-course. In the course of the work the post-holes of one of the original gates were discovered—the first time that the post-holes of a Neolithic gate have been found in a British causewayed camp. Naturally such important features had to be photographed, but though the sky was clear the feeble January sun, pale and low in the sky, did not shine directly upon the holes at any time of the day, and photographs taken from every possible direction failed to reveal anything that could be recognized at a glance as post-holes.

‘ Just at that time, however, the nights were clear and frosty and the full moon was sailing high and serene in a cloudless sky, at very much the same altitude as the midsummer sun, throwing most desirable shadows on the sides of the post-holes and ditches. The sequel is obvious: the ladder-tripod was erected facing the moon, and the camera with its universal joint clamped to the top of it. An assistant with a pocket torch held in the extreme positions that were to be included in the picture enabled the focussing to be done on a screen.

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The exposure given was one hour between 8.30 and 9.30 p.m. on the night of 12 January 1933, and the stop was F 6-8. The result was infinitely better than any of the sunlight photos, and does at least show the post-holes fairly clearly (PLATE VI).

'It may not be necessary very often to resort to such devices, but at any rate they are worth bearing in mind. Probably in most cases an exposure of two hours would be better, especially when fairly near the object, or if the soil is not white chalk. But the longer the exposure, the softer the shadows will be, owing to the relative movement of the moon in the sky. If the moon is not full, the exposure must, of course, be proportionately longer.

'The full account of the excavation will appear in *The Antiquaries Journal* early in 1934'.

EXCAVATIONS AT COLCHESTER (PLATES VII-VIII)

The following report on the excavations at Colchester has been received :—

The fourth season's work has concluded somewhat paradoxically. Our information on the early part of the first century has been advanced but little ; on the other hand the second century provided us with an astonishing discovery.

Let us deal with the earlier period first. It is, of course, the main object of these excavations to discover and explore the earliest remains of Camulodunum, once the royal seat of Cunobeline. The area is so great that the only method of dealing with it is patiently to take an area each season and explore that section. We have already in past seasons learnt that the occupation was very uneven. This season the area selected lay to the south of the complex of early pits and ditches found on the top of the hill last year. Only one feature was found to be systematic. A large ditch about 25 feet wide and 8 feet deep, with rounded floor, was found to run obliquely across the hillside from the crest to the bottom of the valley. On both sides of it early pits were frequent, some of them cutting the top of the ditch and actually later than it. The contents of the ditch are consistently such that they can be dated before A.D. 43.

The ditch discovered in previous seasons, and which was at first believed to be of Roman military origin, was traced last year as far as the end of Sussex road. This year we have been able to locate it further on, on the other side of the road, in the same straight line. It appears

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to run down to the bottom of the valley and may continue across, in the manner of the other earthworks at Lexden.

The small finds of this period are, consequently, not numerous, but include some fine British coins, and as many brooches as ever.

In the second century the early ditch had been filled in and the area came into the possession of a firm of potters. Eight kilns have been uncovered. Of these the first four were lined along the hillside some distance apart. They were obviously producing flagons, mortaria, unguent pots and other buff wares in great quantity. The important discovery was of the other four kilns, which were concentrated within a retaining wall sunk five feet or more beneath the old surface. They were buried under masses of debris of fragments of tiles, pottery and clay, which extended for yards around, and the excavation of which was most arduous. This debris produced conclusive evidence of the manufacture of red-glazed Terra Sigillata, both plain and decorated, on the spot. Over 200 fragments of moulds for the decorated bowls, forms 30 and 37, have been found, and barrow-loads of broken flue pipes, clay rings, plugs, and luting from the flue-pipes, chimney-pots, stands for vessels and masses of burnt clay from the cupolas.

The kiln was almost exactly similar to that illustrated by Knorr, *Blickweiler*, textbild 37-40. Only the central flue and stoke-hole remain, with the burnt clay packing standing around, just as the clay walls fell away from it—for this kiln was finally overstocked and actually fused. Some of the fused 'wasters' are spectacular. It occupied the centre of the north side of the enclosure. The flue is nearly 15 feet long and the kiln was of about 7 feet internal diameter. (PLATE VII).

On each side of it lay a small rounded kiln of normal type, and in the southwest angle a larger kiln which might possibly have been used for sigillata, but more probably was not. The small one in the north-east angle had been built partly into the retaining wall. Its entrance was formed of heavy clay cylinders set upright (probably chimney-pots) and supporting an arch of inverted pots. This kiln (and others) was used in the production of great quantities of 'Castor' ware, of all forms and decoration.

The same potters carried out all this work. The most frequent names are ACCEPTVS, CVNOPECTVS, GABRVS, MINVSO and SENILIS.

They seem to have made every known second-century form of sigillata and we have a figure-stamp (gladiator) for use in appliqué work (unfortunately not stamped). We have an Acceptus stamp on a

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fragment of a barbotined Castor cup, and also (thrice) on a mortarium rim in white ware.

One cannot well discuss the date until the details of the decorated ware have all been studied thoroughly. The first impression is of the late second-century. But there are details which may put this date higher. Of the three coins found the latest is of M. Aurelius. Generally speaking nearly all the potters' names found are dated by Oswald 'Trajan-Antonine' and ascribed to Lezoux. They are in fact one section of the dubious Gaulish (or British?) potters to whom he refers in his preface (p. x).

A number of burials were found scattered over the area. Some of these were incinerations; though only one was of interest it fully made up for the dullness of the rest. A globular amphora was used as a cist (PLATE VIII). The neck and handles were cut off to insert the following:—a large buff 'honey-pot' as urn, a T.S. bowl, form 18/31 stamped (TOCCA), inverted as a lid, four small 'screw' neck flagons in buff ware, two Castor beakers, and a really beautiful little Castor (local) bowl with lid. The barbotine decoration on lid and bowl is very bold and includes a vivid portrayal of a lion hunt. There was also a rectangular mirror, two most unusual brooches, an iron knife with bone handle, bone needle, pins, two rings, and some objects of turned bone. A fifth jug stood outside the amphora.

Other burials were inhumations, generally much later. One was in the debris over the kilns. Another wore a jet necklace. Most were quite fragmentary, and in one case only the mark of the grave and the pot buried in it could be seen.

CATGUOLOPH

In a previous number (ANTIQUITY, 1931, v, 238) in discussing the date of the battle of Mons Badonicus, I identified 'guoloph' with Wallop, the name of a stream in western Hampshire. This identification was accepted by Mr A. O. Anderson (ANTIQUITY, 1932, vi, 83). I was not the first to make this suggestion, which I quoted in the belief that it was generally accepted. It was first put forward by Dr E. Guest in *Origines Celticae*, 1883, II, 174.

Subsequently (ANTIQUITY, 1932, vi, 83) I added a note of caution to the effect that the place-name Wallop also occurs in Shropshire. There is a third instance—also unknown to me when I wrote the first note—but unfortunately I cannot now remember where I saw it: I think it was in the Thames estuary.

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Of these three, early forms are known of the Hampshire site only ; and they do not preclude the identification suggested.

On the other hand, I have since come across two other explanations of the term 'catguoloph' which are inconsistent with each other. One is that of Mr Egerton Phillimore in *Y Cymmrodor* (1892, XI, 24-5, note 4) to the effect that Guoloph represents the Voluba of Ptolemy, which he identifies with Golden, near Grampound in Cornwall (see also ANTIQUITY, 1928, II, 326, where a plan of the earthwork is reproduced). The other explanation is given by Sir John Rhys (*Y Cymmrodor*, 1905, XVIII, 73, note 1) who translates the passage in question as follows :—'And from the reign of Vortigern to the quarrel of Guitolin and Ambrosius there is a space of twelve years, which is empty, that is, empty of war'. Rhys says of it, 'the scribe responsible for the Latin came to a Brythonic adjective which he did not understand ; it proves to have been *guolom*, pronounced *guolov*, the exact equivalent of Med. Irish *falum* (not *follomm*), Mod. Irish *folamh*, Sc. Gaelic *falamh*, "empty" ; compare Welsh *gweili*, "empty", Breton *guollô*, *guliu*. The antiquity of the gloss is suggested also by the use of *pp* as equivalent to *ph*, which is here inexactly used for *v*'.

We are left, then, with (1) a battle which may have taken place either at Wallop in Hants or at Golden in Cornwall or at one of at least two other quite different places ; (2) an adjective implying exactly the opposite, namely, a period of peace. It is not for me to decide between the claims of explanations which have been put forward by such eminent Celtic scholars ; and I can only retire defeated from a struggle which surely deserves to be called 'guoloph' in the Rhysian sense.

O.G.S.C.

LEADENHALL AND ROMAN LONDON

In the Elizabethan play Thomas Dekker's 'The Shoemaker's Holiday', Act v, scene 5¹ there occurs the following passage :—

King. Nay, my mad Lord Mayor, that shall be thy name,
If any grace of mine can length thy life,
One honour more I'll do thee : that new building,
Which at thy cost in Cornhill is erected,
Shall take a name from us ; we'll have it called
The Leadenhall, because in digging it
You found the lead that covereth the same.

Eyre. I thank your Majesty.

¹ Edition of Karl Warnke and Ludwig Proescholdt. Halle, Max Niemeyer, 1886.

PLATE I



SKELETON-SILHOUETTES OF THE EARLY BRONZE AGE, TONGERENSCHÉ BARROW, HOLLAND
(See pp. 470-1)

facing p. 480

PLATE II



SKELETON-SILHOUETTE (CROUCHED), TONGERENSCHÉ, HOLLAND
(See pp. 470-1)

PLATE III



DOLMEN AT DAMIEH, TRANSJORDAN: ENCLOSING WALL HIDING THE INTERIOR. (See p. 472)

PLATE IV



DOLMEN No. 2, DAMIEH, TRANSJORDAN. (See p. 472)

PLATE V



MODERN GHOST-DOOR DOLMEN, DEIR EL DIYAL, NEAR JERASH. (*See* p. 473)

PLATE VI



WHITE HAWKE BY MOONLIGHT. (*See* p. 476)
Ph. E. Cecil Curwen

PLATE VII



KILN FOR 'SAMIAN' POTTERY. COLA HUSTON (See p. 478)

PLATE VIII



ROMAN GRAVE-GROUP WITH AMPHORA-CIST, FOUND NEAR SHEEPEN FARM, COLCHESTER,
AUGUST 1933. (*See* p. 479)

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Simon Eyre, the hero of the play, was an upholsterer and draper who played a prominent part in the affairs of the City of London in the first half of the 15th century. He built Leadenhall in 1419 to act as a public granary against times of scarcity, and before long the place became an important public market where the Common Beam for the weighing of wool was kept, and where, in particular, meat and leather were sold, a function it has performed down to the present day.

The play was written in the year 1600 and Dekker makes Eyre into a shoemaker under the mistaken belief which seems to have been current that the builder of the great leather market must have been a cordwainer by trade. Apparently at the end of the 16th century the tradition still held good that a great deal of lead had been found when the foundations of the hall were dug, which lead was thriftily used to cover the new roof.

In this connexion it is interesting to recall that Leadenhall stands in part upon the site of the basilica of Roman London.² Such a discovery on this site will occasion no surprise and there can be little doubt that the tradition made use of by Dekker had a perfectly sound basis of fact. Thus we have an indirect record of a valuable find on the most important site of Roman London made at the beginning of the 15th century and perpetuated by a name to the present day. C.W.P.

² Royal Commission's Inventory of Roman London, 1928, p. 42.

Recent Events

The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.

A correspondent informs us that at one of the Stradballys in Ireland, 'the churchyard has modern imitation cottages in concrete as mausolea, even to the provision of dummy chimneys!' This is an interesting survival of the custom of making the houses of the dead resemble those of the living. We have always believed—though proof is still lacking—that megalithic burial-chambers and rock-cut tombs were in this tradition. If any of our Irish readers should be able to secure a photograph of the Stradbally cottage-tombs we should be most grateful.



A Sunday paper, describing an exhibition of gold objects at Budapest, ascribes them to the *palaeontologic* period. This is new to us. The word 'palaeontologic' occurs in one passage only cited by the Oxford English Dictionary, where it is explained as 'pertaining to palaeontology; relating to extinct organisms'. This no doubt is true, but not very helpful in dating gold objects. All this points to the crying need of a glossary of technical archaeological terms.



Apropos of this, we are constantly being asked by readers why we do not start a comic section in *ANTIQUITY*. There is a good deal to be said for the suggestion; on the other hand professional wit is never sure of a popular appeal, and nothing is worse than a joke that misses fire. Probably it is safer to leave things as they are. Previous numbers have not all been devoid of humorous patches.



A Romano-British kiln has been discovered at Arne in Dorset, on the southern shores of Poole harbour, and has been excavated by

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the boys of the South Road Senior Boys' School, Poole, under the superintendence of the Headmaster, Mr H. P. Smith. It was due to Mr Smith and his boys that the remarkable Merovingian helmet from Hamworthy was rescued from the oblivion which would otherwise have overwhelmed it (*Teachers' World*, 2 August 1933).



The Brighton and Hove Archaeological Club has drawn up an interesting lecture-programme for the present winter. The subjects have not been selected haphazard, but are made to fit into a comprehensive scheme, the object being to approach universal history through local channels, to reach the unknown and distant by means of that which is familiar and close at hand. That is the way it should be done. A county which has produced a Piltdown skull, several neolithic camps and flint-mines, Cissbury, Pevensey, Highdown and the Battle of Hastings need not hesitate for lack of material, and we wish the organizers every success. (Details from the Hon. Secretary, 248 New Church Road, Hove).



Tintagel has been excavated, and the remains of a Celtic monastery found there. The island site is one that would exactly suit the taste of those early monks. The discovery adds real interest to a romantic place; and though the Cornish dove-cotes are all a-flutter because King Arthur is dethroned, serious students will welcome the light that is to be thrown on the Dark Ages of Early Christianity. The discovery confirms the acute observation of Mr Henry Jenner, F.S.A., in a striking fashion (*The Times*, 7 August; *Manchester Guardian*, 14 September; *Newquay Express*, 27 July).

For further information on King Arthur and Cornwall we would refer our readers to Mr H. O'N. Hencken's *Cornwall and the Scilly Isles* (Methuen's County Archaeologies, 1932), and to Mr Jenner's articles cited on p. 284.



At least six prehistoric sites (five of them hill-forts) have been excavated this summer:—Pen Dinas (near Aberystwyth); Meon hill, Hants; Salmonsbury, near Bourton-on-the-Water, Glos.; Bigbury, near Canterbury; Willbury, Herts; and Finavon, Forfarshire.

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Pen Dinas has yielded remains of stone ramparts, a road-way, a heap of sling-stones and iron objects, but nothing to date its construction (*Montgomeryshire Express*, 29 August); Meon hill has produced a quantity of very fine ornamented pottery of All Cannings Cross type and pits of complicated plan (*Hampshire Observer*, 7 October); Salmons-bury a mixed bag comprising a Belgic hut, a well, skeletons and alleged evidence of cannibalism (*Cheltenham Chronicle*, 23 Sept.; *The Times*, 5 Sept.); Bigbury, probably the one hill-fort really associated with Caesar, has yielded little in comparison with what the gravel-diggers found there last century.



Of Willbury Mr APPLEBAUM says, in a letter to the Editor (1 October 1933):—‘The hillfort had a ditch of about 25 feet in breadth and between 7 and 8 feet deep, and a rampart about 25 feet wide at the base. It was of La Tène I date, and was preceded by an earlier enclosure of unascertained extent, consisting of a palisade without ditch, destroyed by fire shortly before the main fort was built . . . The south gate consisted of two if not three periods . . . In the interior hut-pits were found, one of Hallstatt-La Tène date in association with a flint pavement from which two steps led down into it. Of four other pits, two were overlain by a Belgic flint pavement. In the latter period a flint-metalled road was laid down over the silted-up ditch to the west of the south gate, which had by this time been levelled up . . . Willbury was never a hill-fort in Belgic times’. A report was published in *The Times*, 8 August, p. 15.



The excavations at Jarlshof, near Sumburgh Head in Shetland, have been as fruitful as ever. The finds relate to the three occupation-periods and include a complete mould for a bronze sword, the complete skeleton of a dog (‘about the size of an Irish terrier’), saddle-querns used apparently for pounding up clay for pots (a process we have watched ourselves in Tunisia), stone implements, pottery and pumice (*Scotsman*, *Glasgow Herald*, 26 August, illus.).



The Bronze Implement Committee of the British Association, appointed 20 years ago, reports that its labours are finished, and a

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practically complete card-index of bronze objects of the Bronze Age compiled. The index is deposited in the rooms of the Society of Antiquaries, Burlington House. It now remains (1) to add to it a record, at least of the hoards recorded in printed proceedings and if possible of all isolated discoveries of 'brimps' which have since disappeared, (2) to map the distribution of hoards and selected types. These are tasks for the younger generation of archaeological students (*Nature*, 16 September).



Caves excavated at Ballintoy, co. Antrim, have yielded stratified deposits and pottery 'like that obtained from the *souterrains*' in the district. (*Northern Whig*, 11 September).



Graves near Philippopolis in Eastern Bulgaria have been opened by the Bulgarian Institute of Archaeology. The finds are rich, in every sense, and include a magnificent chased silver cup of Athenian origin, and dated to the 'middle or third quarter of the fifth century'. Two gold rings were found inscribed with the Thracian names of Skythodokos and Mezenli, in Greek characters. The other objects found include gold breast-plates, helmet, sword, spears and silver-gilt plaques. (*Manchester Guardian*, 23 August).



Two beakers have been found at the Sheepwash, Iford near Christchurch, Hants, a port of the Early Bronze Age. They were rescued by Mr J. B. Calkin, of Wychwood School, in whose collection they now are.



In the *Illustrated London News* (22 July, pp. 124-5) is an account of the excavations at Tell Asmar in Mesopotamia by Dr Frankfort, Field Director, Oriental Institute of Chicago, who describes the temple of a fertility god Abu and the objects found there. Amongst them is a cylinder-seal of Hercules slaying the seven-headed hydra!—truly an unexpected discovery from a layer dated to at least 2700 B.C., and evidence of the great antiquity of the myth. In the course of this

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article Dr Frankfort suggests that the Royal Tombs of Ur ' will prove not to contain ordinary interments of royal personages at all, but victims killed in the course of similar ceremonies, when famine or drought required a particularly efficacious ritual including the sacrifice of human life '.



The Oxford University Archaeological Society, under the direction of Mr J. N. L. Myres, F.S.A., and Mr H. N. Savory, and with the kind permission of Mr H. O. King, the owner of the site, undertook in July the excavation of part of a prehistoric settlement on Mount Farm about a mile and a half north of Dorchester, Oxon. A circular ditch and a complex of other ditches and pits are visible on the area selected, both on air-photographs and from the ground in standing crops or grass. The large circle was found to antedate a group of Early Iron Age pits and is presumably of Bronze Age date, though it could not be fully excavated owing to the presence of a hay-stack. Its ditch, on the bottom of which in several sections traces of fires were found, was almost filled up and its significance probably already forgotten in the Iron Age, for pits and ditches of that period were cut through its filling in several places. Twelve of these pits and several ditches, including a roughly circular enclosure of the same date, were excavated. Pottery of all phases of the Iron Age from Late Hallstatt types onwards was found together with worked flints, loomweights and a few bone objects. The settlement was apparently extended in the Roman period. It is hoped to continue the excavation next year with the especial objects of completing the examination of the Bronze Age circle and of tracing the development of the settlement, and if possible its field-system through the Iron Age and the Roman period.

Some Recent Articles

This list is not exhaustive but may be found convenient as a record of papers on subjects which are within the scope of ANTIQUITY. Books are occasionally included.

The Antiquity of Man in southwestern Asia, by Henry Field, *American Anthropologist* Jan.-March 1933, xxxv, 51-62.

In this interesting paper Mr Field enumerates briefly the principal discoveries of palaeolithic man and his tools in the Middle East, and the few scientific excavations that have been carried out. The survey is, however, very incomplete; there is no reference to the work of Caton Thompson and Gardner in the oases—a regrettable omission. He concludes with some attractive theorizing.

The Roman evacuation of Britain, by H. Stegan Schultz. *Journ. Roman Studies* 1933, xxiii, 36-45.

Argues powerfully for the later date (442), supporting Bury against Collingwood and the bulk of orthodox opinion. The evidence cited is strong, and needs refuting if the earlier date is to be retained.

Über die streitaxtkulturen in Russland; studien über die verbreitung neolithischer elemente aus Mitteleuropa nach osten; by Aarne Äyräpää. *Eurasia Septentrionalis Antiqua* (edited by Tallgren and Manninen, Helsingfors, and abbreviated as *ESA*) 1933, viii, 1-160.

This monograph deserves a special review, which we hope to be able to give it later.

Preliminary note on some incised, cut and broken bones, found in association with *Sinanthropus* remains and lithic artifacts from Choukoutien, by W. C. Pei. *Bull. Geol. Soc. China* 1932, xii, 105-8.

Prehistoric Britain in 1931 and 1932, by Christopher Hawkes. *Arch. Journ.*, 1933, lxxxix, 275-97.

This is an attempt to publish an annual survey of periodical publications (not a review of digging, etc.). It is indispensable to those who wish to keep abreast of the times, and incidentally would save professional archaeologists from a number of enquiries, if it were read first by some of their correspondents. We hope that as many as possible will support the Royal Archaeological Institute, in whose Journal it will be published each year, by joining the Institute, or at least by subscribing

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to the Journal. We understand that the compiler is *not* going to have a number of offprints made, at his own expense, for the benefit of those who are 'very interested in these things', but also like to get something for nothing. It is high time we stiffened our front a bit, and refused to let ourselves be exploited by camp-followers. (Royal Archaeological Institute, Lancaster House, St. James's, London, S.W.1).

The Prehistoric Geography of the Kharga Oasis, by G. Caton-Thompson and E. W. Gardner. *Geographical Journal*, November 1932.

This paper supplements in many particulars articles published in the *Geological Magazine*, *Man*, and *Antiquity*. It deals primarily with the prehistoric physiography of the area, and archaeological evidence is used for dating geological events. The general conclusion reached is that the area has experienced arid or semi-arid climatic conditions ever since Pleistocene times; and this being so the problem was to discover the source of prehistoric man's water-supply. The present water-supply is artesian and is derived from the water-bearing sandstone which underlies the Libyan Desert and is nowhere less than 80 metres from the surface. It is suggested that this supply was first tapped by the Persians; it is plainly impossible that it could have been reached by Palaeolithic man, and some other source had to be found. This has been discovered in the form of 'fossil wells', which now consist of mounds of deposit thrown up by springs which were gradually choked by wind-blown sand. The excavation of some of these mounds has produced ample evidence of their use from Acheulean times, when they first burst through the soil, till the Neolithic period, when they were being gradually choked up. Between the time when Neolithic man was driven from the oasis by lack of water, and the Persian and Roman period when the deep waters were exploited, Kharga appears to have been uninhabitable, and there are in fact no traces of human habitation.

Eskimo and Palaeolithic Art, by Miss F. de Laguna. *American Journal of Archaeology*, Oct.-Dec., 1932.

This is the first part of an article, to be continued in the next issue. It reviews the various theories of the derivation of the Eskimo race and culture from the Palaeolithic of Europe, which have been put forward by many writers, from Testut onwards. Miss de Laguna examines and compares the surviving art of the Upper Palaeolithic in Western Europe with Eskimo art of the present day and also of the ancient Eskimo cultures which have of late years been excavated in Greenland and Canada. She stresses the importance of Siberia as providing a necessary link in the chain, if chain there be, and it is much to be hoped that the results of recent excavations in Siberia and Central Russia will soon be made generally accessible. The comparison between the two sets of drawings, sculpture, etc., is made with great fairness, and the writer appears (at this stage of the inquiry) to retain an open mind on a possible connexion.

Skara Brae, Orkney: official guide by V. Gordon Childe. H.M.S.O. 1933. 6d.

Although published by the Stationery Office, the credit for producing this excellent guide is shared by the author and the Ancient Monuments Department.

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Excavations at Troy 1932 : report by Carl W. Blegen. *American Journal of Archaeology*, Oct.-Dec. 1932.

A preliminary report on the new excavations at Hissarlik begun in 1932 by the University of Cincinnati. The expedition obtained a concession from the Turkish Government to excavate, and had the great advantage of the presence and advice of Professor Dörpfeld, whose knowledge of the site extends over 50 years. The expedition had two main objects : (1) to make a fresh and thorough test of the stratification of the site in the light of the vast accessions to knowledge of Mediterranean archaeology since the original excavations ; (2) to make an exhaustive search for the prehistoric burials, of which none had yet been found. Two undug areas were chosen which it is hoped will give, when taken together, a complete sequence of the strata which make up the mound. During the first season the levels of the Roman period and of the ninth to the fifth cities of Schliemann and Dörpfeld's system were excavated. The examination of the stratification of these two sites will be continued during the present season, and the abundance of pottery coming to light promises to give a complete Trojan ceramic sequence.

The search for burials was carried out by the digging of some 80 exploratory trenches. The evidence so far obtained is inconclusive, but there appear to be considerable traces of incineration burial, though the bones, which are mostly in small fragments, are scattered about in no sort of order.

Les Industries à éclats du Paléolithique ancien : (I) Le Clactonien, by the Rev. Abbé Henri Breuil. *Préhistoire*, tome I, fasc. II, 1932.

This, the first of a series of articles by the Abbé Breuil, proposes far-reaching changes in the traditional classification of Upper Palaeolithic cultures. That traditional classification began with an industry in which implements were made from flint cores, and which was labelled, not very happily, Chellean ; this was followed by the Acheulean, where the flakes struck from the cores were themselves also worked into implements, and finally by the Mousterian, where the use of flakes predominates and the flakes are struck off from nuclei which have been prepared, and the plane of fracture afterwards carefully retouched. It has been supposed that the Chellean industry corresponded with the last warm fauna, which gradually died out during the Acheulean ; and that the Mousterian corresponded with the last cold fauna.

The new classification here put forward lacks this pleasing simplicity, which is rendered unconvincing by, for instance, the association of flake-industries with a warm fauna at Montières, Grimaldi and elsewhere, and the discovery of a flake-industry beneath several Acheulean layers at Barnfield Pit, Swanscombe. Readers are referred to the article itself, and especially to the diagram on p. 127 ; but in brief it may be said that its thesis is that core-industries and flake-industries are both found in each of the later interglacial periods, and further distinctions are drawn between those in which the flakes were struck off on an anvil, by a stone percussor, or by pieces of wood. The Abbé deals with the earliest of the flake-industries, called Clactonian, from Clacton-on-Sea, which has yielded one of the purest deposits of the industry, which he places in the 1st (Gunz-Mindel) interglaciation, and parallel to the Chellean industry which belongs to the same period.

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Cinq années de recherches archéologiques en Éthiopie, par R. P. Azaïs and R. Chambard ; 2 vols., Paris, 1931, 350 francs.

The publisher could not afford to send us such an expensive book for review purposes, so we cannot tell our readers what it is like. Those who have 350 francs to spare can get it and see for themselves.

The Pazirik burial of Altai ; written up by Eugene A. Golomshtok from Russian accounts. *Amer. Journ. of Arch.* Jan.-March 1933, xxxvii, 30-45.

A very rich burial in a Central Asiatic Kurgan—the wooden sarcophagus was perfectly preserved (fig. 4), and so also were remains of felt carpet, carved wood, leather. A curious feature was the reindeer-masks of the sacrificed horses.

Excavations at Has Hüyük, Southeast of Bohgaz Keui, by L. Delaport. *Arch. Anz.* 1932, part 1-2, cols. 230-3.

Beiträge zur chronologie der Lagasch-Periode und zum Sumerer-Problem, by Viktor Christian. *Archiv für Orientforschung* 1933, viii (heft 4-5), 207-15.

A review of Dr Frankfort's book, *Archaeology and the Sumerian Problem*. Univ. Press, Chicago, 1932 (Or. Inst., Studies in Ancient Oriental Civilization, no. 4).

Excavations of the Harvard-Boston Expedition in Halfa Province, 1930-31, by N. F. Wheeler. *Sudan Notes and Records*, vol. xv, 1932.

During the season the expedition excavated the Egyptian Middle Kingdom fort of Shalfak at Sanas, about 35 miles south of Wady Halfa. Like other forts in the neighbourhood, it is built of mud-brick on a rocky height overlooking the river. It is believed to have formed part of a line of signalling stations which can now be carried almost down to the forts of the Second Cataract. The most interesting find was an inscribed stone from a quay at the neighbouring fort of Uronarti, mentioning a visit in the 19th year of his reign of Senwesert III on the return of his campaign in 'miserable Kush'. A photograph and a drawing of the inscription are given. This number also contains a note on the discovery of a Roman coin of about A.D. 350 at Sennar.

Citania e Sabroso, by Mario Cardozo. 1930.

An account of two famous Portuguese Iron Age *oppida*, excavated during the seventies of the last century by Dr Martins Sarmiento. The sites, which were occupied from at least the 6th century B.C. till the 3rd or 4th century of the present era, yielded plentiful remains of pottery, worked flints, bronze, etc. The fortifications and the houses were very well built of stone and considerable ruins of them remain. Illustrated, and there is a résumé of contents in French.

Akkadian and Cappadocian texts from Nuzi, by J. M. Meek. *Bulletin of American Schools of Oriental Research.* December 1932.

These tablets, which were discovered during the season 1930-31, have now been deciphered. By far the most interesting is a map (reproduced), which is by a long way the oldest map known. It is thought that it may represent part of northern Mesopotamia.

Reviews

LES FRAUDES EN ARCHÉOLOGIE PRÉHISTORIQUE. By A. VAYSON DE PRADENNE. *Paris : Emile Nourry, 1932. pp. 676, 44 plates and 40 figs.*

It must always be a matter of speculation whether that fabulous quality known alternatively as 'French Logic' or 'L'esprit gaulois' is the cause or the consequence of French national characteristics. M. de Pradenne makes this speculation even more hazardous by presenting to his readers as clear, impartial, concise and accurate a study of fraudulent deals in matters archaeological as could conceivably be desired. Remorselessly he takes a long series of once, and in some cases, still-famous swindles, and traces their history and consequences with a meticulous appreciation of the details of their development which would make the most notable of criminal lawyers envious. For he never loses the thread of the story even while repeating the arguments of supporters and opponents, the statements of the criminals and the pleas of their advocates.

Thus M. de Pradenne vindicates French logic, but, since the most alarming of the cases he deals with concern France, at the expense of French logic. For he dissects by the same methods the living bodies of argument which had been so logically built up by other Gallic logicians. He adopts in most cases a fine dramatic scheme in the framework of which he examines each story. 'Ambiance—début de la fraude—premiers soupçons—denonciation—la controverse—fin de l'affaire'. With minor variations each story is told on these lines. At the end of it all the reader will feel fortified, depressed, alarmed, doubtful both of his own eyes and of the honesty of mankind, but ultimately grateful that there is always some good fairy who steps in and stops the nightmare. For this long tale of fraud is a tale of good and evil mixed in inextricable confusion. Was there ever a more sardonic tale than that of the jawbone of Moulin Quignon? the jawbone which gave to that charming scientist Boucher de Perthes just exactly the evidence for which he had been looking to prove the existence of Fossil Man. Brought to him by his trusted workmen from a pit, it not only convinced him of the correctness of all the hypotheses which he had propounded but it also convinced his opponents, and at last made the world safe for Fossil Man against the attacks of religious orthodoxy and infuriate fundamentalism. And all the while the jawbone was a fake, produced simply because, in his kindness of heart, Boucher de Perthes had offered too high a reward to the finder of any such relic. Even when Gallic enthusiasm had been damped by British commonsense, and the redoubtable opposition of Sir John Evans (who frankly admitted that nothing could have suited his own views more admirably than to accept the genuineness of the relic), aided by an examination on the spot by the acidulated Mr Keeping, had settled the matter beyond doubt, Boucher de Perthes still maintained the genuineness of the jawbone. In this he bears a striking family likeness to the Reinach brothers, who, after the actual maker of the tiara of Saitapharnes had explained before a committee how and when he made it, still carried on a guerilla rearguard action for authenticity. In effect this is *amour propre*, a quality with which all academic folk seem highly endowed. Indeed, as the author explains, age and status make men, even the most learned, almost

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impermeable by logic once they have publicly stated their views. The whole story of the tiara of Saitapharnes is told here, admirably documented and annotated with the most shrewd and witty notes. It seems almost inconceivable that, with such a story available to study, and with the older tale of the Moulin Quignon relic to help, the *Affaire Glozel* should ever have assumed the proportions which it attained. That some of the victims of the tiara should have also been the victims of Glozel, strange though it may be, serves but to underline the conclusion that *amour propre* does more to retard the growth of truth than any other obstacle.

In every fraud there is a forger, and the classification of forgers is as necessary a weapon for archaeologists as his pick and shovel. Most forgers are such for gain. Flint Jack (whose doings are here admirably documented) is the untutored forger who ultimately acquires skill. Rachoumowski, who made the Louvre tiara, was a highly skilled goldsmith. Between the one and the other the archaeologist will ultimately find the truth, for the untutored forger makes just those mistakes which science will immediately recognize, while the highly skilled artisan must borrow from somewhere the necessary knowledge that he requires, and those sources are never so recondite that they cannot be spotted.

But there is the rarer and more troublesome kind of forger—the mischievous and malicious person whose sole aim seems to be to create a humorous situation or to make things ‘more difficult’. If he be an archaeologist—and the type forger-archaeologist is happily of extreme rarity—he may give endless trouble until his antics are shown up. The finds from the island of Riou, near Marseilles, were of this kind. Flint implements of undoubted genuineness and of Egyptian type were found in what was alleged to be a surface-deposit at the island. A connexion between Egypt and Europe by sea at this early date was to scientists unthinkable, but here they were faced by indubitable facts; against authentic facts no inherent improbability can avail. But it was soon discovered that the implements were patinated with what is known as a ‘desert patination’, due largely to wind-blown sand and characteristic of implements found in Egypt, and it was at once evident that the circumstances of their finding were suspect. In the end the author gives the solution, after some first-hand research among the documents and personalities concerned. I will not spoil the story by stating the dénouement. It must be read in the author’s elegant and sarcastically tactful prose.

Strangest of all the frauds of the ‘jester’ type is that which concerns the finds from an estuary fort in the Clyde. Here it was a case of the excavator producing from a genuine site objects which had been put there by a crank simply to make it ‘more exciting’. But so ludicrous to look at are the objects in question that one wonders that Scottish archaeologists wasted even a moment of thought over them.

The author reaches his highest level of criticism and description in the story of the Saitapharnes tiara. His footnotes deserve a particular study, so faithfully and brilliantly do they annotate the various developments in this ten years’ wonder. Here is the standard fraud for all time, developing on normal lines, ultimately proved by irrefutable evidence as a fraud. The final report of Clermont-Ganneau is a model of its kind and the more astonishing in that it reveals powers of criticism of evidence and a capacity to analyze which, if applied at the outset, would have saved the Louvre from the ridicule which fell upon it. Most interesting of all is the way in which, by similar skill and judgment, Furtwängler’s original declaration of fraud, which French archaeologists spurned, was ultimately proved right in almost every detail, even to an identification of the sources from which the forger had drawn his designs.

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One interesting conclusion is drawn by the author in the matter of forgeries in general, a conclusion all too often forgotten today. He points out how the archaeologist must depend entirely on his own resources—and he will ultimately be justified, even as Furtwängler was. The tendency to bring in the aid of non-archaeological experts is almost always useless, at best suspect. I cannot do better than give the author's own words : at one moment in the controversy the aid of expert Parisian goldsmiths was sought, and proved absolutely useless :—

‘ On voit par là que les hommes de l'art, non seulement n'ont pas aidé la vérité mais encore on a failli l'entraver. Ce fait montre combien il est erroné de mettre sa confiance et son espoir pour des questions d'authenticité dans des “ gens de métier ”. Les artisans fabricants d'objets modernes, connaissent bien leur technique actuelle mais sont facilement déroutés des qu'on les sort de ce qu'ils ont toujours vu. Ils joignent souvent à cela une certaine suffisance que leur donne l'habitude de parler à des clients incompetents. Enfin ils n'ont pas de culture scientifique. Au total ils tranchent généralement à faux. Les connaissances techniques sont les plus utiles pour déceler la fraude—elles sont indispensables—mais il faut qu'elles aient été acquises par un archéologue doué de sens critique et étudiant au point de vue comparatif. Cependant à chaque affaire de fraude la presse et le public imaginent de faire trancher la question par un ouvrier ’.

Here the author touches upon a matter of prime importance, which is still overlooked by the average archaeologist. It is the absence of trained critical powers which counts most. I have known of a sculptor who accepted as genuine the most preposterous forgery of a statue. He had technical knowledge but did not know how to apply it critically to work which was not his own.

Every archaeologist should read this book, if only as a warning. The reading of it has been to me an unadulterated pleasure, marred only by the rather large number of misprints and printer's errors.

STANLEY CASSON.

DIE ERFORSCHUNG DER SPATBRONZEZEIT, HALLSTATT- UND LATENE-ZEIT IN ENGLAND UND WALES, von 1914-1931. By CHRISTOPHER HAWKES. *Sonderabdruck aus dem XXI Bericht der Romisch-Germanischen Kommission*, 1932. pp. 86-175. Taff. 12-27, Abb. 1-60.

The recent and laudable policy of the distinguished body in whose name this publication is issued has been to collect for the use of German students first-class summaries of archaeological knowledge acquired in Europe since the outbreak of War. This has a reciprocal value : it furthers the true understanding of the ancient German race on the part of Germans themselves ; it permits the compilers of the summary, and their non-German readers, to take stock. In this case, by a fortunate chance, the English material had been brilliantly summarized by Messrs Kendrick and Hawkes in their *Archaeology in Britain* (1932), and further refined in the pamphlet prepared by them for the English Session of the Prehistoric Congress of 1932. Thus, the foresight which secured this fine account of recent work for the *Bericht* was rewarded by a particularly lucid description.

The dangers of such a summary are apparent to all. Drastic condensation tends to minimize and tempts to bridge the gaps in our knowledge. But, when that knowledge is moving so fast as we may proudly claim British prehistory to have moved in recent years, the dangers are entirely outweighed by the necessity of taking stock ; and that is

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pre-eminently the point of view taken in this work, wherein the *Zusammenfassungen* have much positive and little negative fact, the author being rightly concerned with stating what we know rather than wherein we are yet ignorant. Bearing this in mind, there is relatively little to criticize and much to praise. The lucid text and the admirable illustrations, both in half-tone and line, are in the best traditions of the *Bericht*, and include many pictures which will be new to English readers.

To a northern Englishman, however, it may seem that not quite enough attention has been paid to that area. It is true that the evidence from this Highland zone is much scantier than that which the Lowlands have produced, this being due partly to the paucity of modern workers in prehistory and partly to the relatively thin distribution of the prehistoric population. Yet it has yielded rather more material than is recognized in this summary, and in forms entirely suitable for inclusion within it. Perhaps the most striking omission is Dr Raistrick's valuable summary, with distribution-maps, of Bronze Age finds in northern England, published in the *Yorkshire Archaeological Journal*, 1929. This work is, indeed, incomplete, because much field-work remains to be done; but it goes a great deal further than anything before it. The maps form a logical succession to the same author's more recent mapping of the Mesolithic culture in Northumbria (to use a convenient term), and show Bronze Age man thickly populating Eastern Yorkshire, and spreading in time much less thickly westwards and northwestwards, where Megalithic folk were already established in the Cumbrian area, by the York moraines, and the easy gate of the Airedale gap. The natural features of the zone impose themselves and give to the distribution a coherence which is not apparent in the more limited surveys hitherto available. To the more thickly populated zone belongs the manufactory of urns at Ross Links (*Arch. Aeliana*, ser. 4, VI, 197-8): while a movement in the other direction is attested by the 'encrusted urns' to the list (*Antiq. Journ.* VII), of which may now be added the Ryton (*Arch. Aeliana*, ser. 4, V, 22-25) and Lancashire (Fox, *Personality of Britain*, pl. 4) examples. Again, their fortifications are represented by Blue Crag (Northumberland), which produced corn-grinding instruments of all the primitive types (*Proc. Soc. Ant. Newcastle*, ser. 4, II, 23-4, 138-43). Here, indeed, the evidence is perhaps more precise than that from Eston Nab (North Riding), though the fortification is much smaller. For at Eston Nab at least two divisions exist in the fortress, one marked by a long burnt palisade, the other in the great rampart of wood and stone (among which a Bronze Age stone was reused). Indeed, it seems possible that the awaited appearance of the detailed report may enable us to distinguish two periods and thus to resolve the problem implicit in Mr Hawkes's note (159, p. 125) which finds the rampart at Eston earlier than the normal examples of this type of hill-fort. But lack of excavation leaves this fortification as isolated, and therefore as yet unrepresentative, as the Scarborough discoveries. It is impossible to say for how wide an area the latter stand, and, therefore, Dr Raistrick's maps, giving the general picture, are the more valuable.

Another point which concerns this distribution is the relative rarity in Cumbria of the lynched form of settlement distinguished by Elgee in Cleveland. The typical Cumbrian mountain villages* exhibit, right through from the late Bronze Age to the Roman period, small enclosures, little more than gardens or folds, but no lynchets. They are, in fact, less regular examples of the Blue Scar *Gehoftumzäimung*, and outside the

* Since writing this review the best group of them has been splendidly published by R. G. Collingwood, in *Cumb. and Westmorl. Arch. and Antiq. Soc. Trans.* xxxiii. I.A.R.

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enclosure there are no fields. Thus, it is a fundamental distinction between the Cumbrian and Yorkshire areas that in the uplands of the former settled agricultural holdings are sparse, the villages being rather those of herdsmen in small groups. Further, the Bronze Age here lasted a very long time. There must, however, have been other groups; and as a precursor of expansion towards the area may be noted the anthropoid-handled sword from Clothholme by Ripon (*P.S.A.Lond.* xxvii, 214), matched by the rediscovery, this year, of the Grimston example. Nevertheless, this picture of Cumbria as an entity distinct from the Yorkshire area remains true down to Roman times, and is illustrated by such settlements as Lanthwaite Green (*Cumb. and Westmorl. Arch. and Antiq. Soc. Trans.*, ser. 2, xxiv, 119) discovered within the period under review, and many other earlier discoveries. This was, then, one of the social, if not racial, distinctions among the Brigantes, and explains why their Roman canton should be limited to Yorkshire, among less mobile folk.

In further connexion with the Roman Age, it may be remarked that if the cultural connexion between the Icenii and Parisii is sound, it explains the final action of Caratacus in flying to Cartimandua, and also the interest of the Brigantes in Boudicca, as noted by Tacitus. The definite division of that great tribe, or agglomeration of tribes, into pro-Roman and anti-Roman factions hardly justifies the star in Abb. 58. While the text of Ptolemy and the story of Cuchulain, as well as Dr Mahr, may be adduced in support of a north-British emigration to Ireland, a matter which may well be a parallel for the behaviour of Commius the Atrebat.

Outside of the northern area, this reviewer hardly ventures to comment. But two points of interest have struck him. The conveyance, or vehicle, burnt in the Lexden tumulus is not necessarily a chariot, for the iron bands ornamented with bronze decorative edging are not felloes or tyres, of which examples have not appeared in the find as a whole. Secondly, the Moel Hiraddug shield-boss is not linked by any of its commentators with the Gallic double-axe as figured on the Arch at Orange and in other early Roman reliefs. Yet that is what it is, complete to a representation, in conventionalized form, of the cord which bound it securely to its shaft.

I. A. RICHMOND.

CORINTH, volume iv, part 1: Decorated Architectural Terracottas. By IDA THALLON-HILL and LIDA SHAW KING. *Harvard University Press*, 1929. pp. xii, 120, 5 coloured plates and 48 illustrations. 5 dollars.

Mrs Van Buren in her *Fictile Greek Revetments in the Archaic Period* (1926) summarized the earlier material now fully published here. Her hope that the remains might be assigned to their various buildings is not realized; they are the mere smashed and jumbled 'fill' of Roman Corinth. In dating the archaic material Mrs Thallon-Hill—who incorporates the notes made originally by Miss King—is less definite than Mrs Van Buren, from whom, again, Mr Payne differs somewhat in ch. 17 of his *Necrocorinthia*, published later than the present work, but presumably too soon to make use of it. In general Mr Payne would date the 6th century material somewhat later than Mrs Van Buren, while Mrs Hill regards a chronological arrangement as impossible. The earliest example of these so-called 'Megarian' revetments, reconstructible from fragmentary members, is dated by Mrs Van Buren to the very beginning of the 6th century, and by Mr Payne to the second quarter of it. Mrs Hill places it on one page in the 'early part', on another in the first half, of the century.

The book contains a bibliographical note, a discussion of the well-known part played by Corinth in the development of architectural terracottas, as illustrated at

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Corinth and elsewhere, an account of the material from Corinth arranged by kinds (antefixes, ridge-palmettes, simas, tiles and lateral acroteria) which would have been clearer had use been made of heavy type or marginal sub-divisions, and an inventory of some 700 fragments. In identifying the various examples of the revetment referred to above, I found the tiles were given as T41, 42, 43, 44, 50, 51, 145; but the inventory stops short at T144. By comparison with Van Buren, I surmise that the last is a slip for T45. And 'Pindar, *Olympia*' on p.5 is a slip for *Olympians*.

The illustrations, including Professor Duell's water-colours, are good, but often give no indication of scale.

Mrs Hill differs from Lattermann's interpretation of the Arsenal inscription, with which Mr Payne acquiesces. She does not think it can be interpreted as meaning 'combination-tiles'.

W. L. CUTTLE.

EXCAVATIONS AT TELL EN-NASBEH, 1926 and 1927: a preliminary report.

By W. F. BADÉ. SOME TOMBS OF TELL EN-NASBEH, discovered in 1929; a special report. By W. F. BADÉ. *Palestine Institute Publications*, 1798 *Scenic Avenue, Berkeley, California*, nos. 1-2, 1928. Each 5 dollars.

One of the great needs for the student of early prehistoric archaeology of Britain is a series of accurate records and detailed plans of the early burial caves of the Mediterranean area. It is therefore satisfactory to have the report of Professor Badé's examination of the tombs of Tell En-Nasbeh.

The first report contains the record of two tombs, nos. 5 and 6. The latter produced evidence of having been used over a long period—c. 3000-2500 B.C.—for the burial of over 75 persons of the same racial stock, the only undisturbed skeleton being an extended one. Many carnelian beads were found and one large barrel-shaped bead of gold. The excavator's conclusion was that the tomb had been rifled by the middle Bronze Age builders of the city wall.

The plan indicates a somewhat irregular and mutilated main chamber, which was approached through an antechamber at a higher level and led through a narrow entrance to a smaller end-chamber. Tomb no. 6 had a similar antechamber and its main chamber was still more mutilated.

The tombs recorded in the second report were better preserved and provided valuable data. No. 3 had 'a shallow forecourt chiselled out of the limestone and at its east end a low façade with its small portal whose upright door-stone was still in place. Immediately to the left of it, but in the north facing of the forecourt, was a smaller door-stone, rabbeted deeply into the rock'—as was also the principal door-stone.

The forecourt was filled with earth and the tomb therefore completely sealed, but it had been reused, for the upper layers of its contents consisted of Hellenistic vases, dating from 275-250 B.C. and beneath them Iron Age pottery of 900-850 B.C.

The chamber was roughly rectangular and had a central trench or 'storage pit' in one corner, also benches, as well as alcoves and smoked lamp-sockets. Professor Badé quotes with approval Mr Duncan Mackenzie's suggestion that corresponding benches in the similar tombs at Beth-Shemesh are representations of the divans of oriental houses.

Tomb no. 5 dated to c. 1000 B.C. or earlier; it had a general resemblance to no. 3 but had a flight of steps partly within the main chamber as in some of the Majorcan tombs, also a separate end-chamber of about half the size of the main one. It contained

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a great number of pots, including many lamps, also two scarabs, which at present cannot be precisely dated.

One more tomb, no. 4, of the Graeco-Roman period, illustrates the later development of the type. The main chamber, which retained the central pit, had no less than eight elongated side chambers opening from three sides at right angles ; one of these more than twice the size of the others and provided with benches.

Several plates of sections and drawings of the pottery from the tombs are included in the illustrations.

Little or no light is thrown on the question whether the reuse which so frequently occurs was foreseen or intended by the original constructors of these tombs.

The constant features of the Mediterranean tombs illustrated in this group are the approach through a pit, which may have served as forecourt or antechamber, when the last was absent as a separate structural feature ; the closed doorway, sealed by filling the pit with soil ; the main chamber, usually provided with surrounding benches and sometimes by lamp sockets ; and, on occasion, one or more side chambers, usually opening from the main chamber.

W. J. HEMP.

DIE MÜNZEN VON SYRAKUS. By E. BOEHRINGER. *Berlin : Walter de Gruyter* 1929. pp. VIII, 297, 39 text-illustrations with portfolio of 32 collotype plates. 80 marks.

This corpus of the earlier coins of Syracuse has already a place in the bibliography of numismatics : to criticize it in detail is within the competence and opportunity only of specialists, but a more general public will welcome so important an addition to our knowledge of these coins, long famed and of great historical interest. This is one of the increasing number of works which make use of the study of die-sequences. The Greeks used separate dies for the obverse and reverse of coins, the former sunk in an anvil and thus able to withstand much usage, the latter engraved on a hammer-struck punch and so liable to speedy fracture. Obverses are thus found, in successive stages of wear, combined with two or more reverses, and the coins may be arranged in the order in which they were struck. Needless to say, the method is not infallible, nor can unbroken series always be secured (for we are dependent upon the coins which have survived), but a high degree of success is achieved, providing a ' scientific ' criterion to support, or rebut, chronology based on style ; which remains the only criterion where die-sequences are lacking. Die-sequences do not necessarily prove *absolute* chronology, for busy mints employed more than one anvil and punch simultaneously, and this creates such problems as largely form the material of this book.

Dr Boehring describes and considers all coins from the earliest (issued under the *régime* of the landed aristocracy ; here dated to c. 530 B.C.) to those preceding the signed pieces (c. 435 B.C.), thus including the period of great activity under Gelon, with the Demareteia ; the six groups (divided into twenty-five series, with sub-divisions) correspond to the stylistic division into early, ripe and late archaic, strong, and early and ripe classical styles. The Demareteia fall within series XII e. The author picks his way skilfully through the maze ; it will be remembered that the tetradrachms remain strictly faithful to the original types ; obverse, a four-horse chariot, reverse, the head of Artemis-Arethusa ; but show great variety of treatment and detail. The horses now step off with the near foot, now the off ; they proceed now at a walk, now a gallop ; their heads arrange and rearrange themselves. Variety is even more discernible in the reverses, and the hair is worn in many styles. The enlarged field of the Demareteia (decadrachms)

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gave full scope, and a crown of victory appears, with a (Carthaginian) lion in the exergue of the obverses, as later a sea-monster commemorates the battle of Cumae.

The tracing of the sequences and the arrangement of the series must be followed in detail to be appreciated. Isolated points of interest or controversy may be mentioned here: the mass-production of coins under Gelon (series VIII-XI), when a die was even borrowed from the Leontini mint; the ascription to the Demareteia-artist of the unique Brussels tetradrachm of Aetna; an apparent gap after the Demareteia series, when no tetradrachms were issued; the marking of the eye-lashes of series XIV (*cp.* the in-let lashes of, *e.g.*, the Delphic Charioteer); the postulation of the discovery of a new hardening process for metal at about this time (the second quarter of the 5th century); sundry observations upon die-injuries and repairs, and on the use of 'hubs', *i.e.* positives from which the negative dies were made.

In addition to the description and catalogue, there are sections upon forgeries and barbaric imitations, upon technical, economic and other aspects of these coins. The discussion of the sea-monster (*ketos*) seems to seek too great particularization, at any rate for the early meaning of the word, which I take to have been quite generic. The identity of the reverse head is established, with a tentative suggestion that the priestesses of Artemis-Arethusa served as models, for it is observed that few of the models would have won prizes in a beauty competition—not that the priestesses were especially uncomely, but that the choice of models (if models there were), if free, would have been determined by some such method.

W. L. CUTTLE.

EVERYDAY THINGS IN CLASSICAL GREECE. By MARJORIE and C. H. B. QUENNELL. *Batsford*, 1932. pp. XII, 144, and 84 illustrations, map, etc. 8s.

This is the third, and last, volume of the authors' *Everyday Things in Ancient Greece*. It must be judged with its predecessors; by itself it hardly seems to justify its title, as I understand the term 'everyday things'. But in fact in certain respects it is just in those things that our present knowledge of classical Greece is less than that of other times and peoples: for example, the dearth of 5th century domestic sites. Yet the authors have been able to make pegs on which to hang a good deal of information about everyday things which supplements the earlier volumes.

The chapter on the buildings on the Acropolis and at Delphi has good remarks on the evil of mere slavish copying in architecture and on the Delphic oracle, 'not a pious fraud'. For towns Priene has to serve, with excursions into medicine and the theatre; for town-houses, Delos, with remarks on furniture, pottery, coinage and terracottas, and a lengthier account of Xenophon's *Oeconomicus*. The last chapter deals with war, especially the Peloponnesian War.

I fear that much zeal is supported by too little knowledge; in particular, desire to expose the evils of war has led to unhistorical treatment. For instance, 'always (Thucydides) had at the back of his mind the terrible ending which he was to write to the seventh book' (introduction, p. VIII). Since he wrote of current events, and found it necessary to compose the 'second introduction' of Book v when the war restarted, this is not so, and when the war is represented as causing the destruction of Hellas, the authors surely forget that in this very book they have recourse to post-war Hellas for town-planning, house-plans, theatres, hospitals, Plato, Xenophon.

I have noticed misprints (Decelei, Potidae, Hegesa). The account of the origin of Tragedy is brief but bold. 'Actor' is not derived from the Greek ('a leader'), but

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from Latin. The style sometimes is uneasily jaunty, and twice a curious use of 'as well' occurs, leading to ambiguity ('As well that at first the athletes competing at Olympia wore girdles about their loins', p. 96 is not intended to be an argument for a cautious *Nacktkultur*). And may I protest that Topsy just grewed, and had not 'grown' (p. 49)?

Everyone knows and respects the 'Everyday Things' series: *ne supra crepidam*. . . .
W. L. CUTTLE.

COROLLA ARCHAEOLOGICA. Principi Hereditario Regni Sueciae Gustavo Adolpho dedicata. Skrifter utgivna av Svenska Institutet i Rom, II (Acta Instituti Romani Regni Sueciae, II). Lund: Gleerup; London: Humphrey Milford, 1932. pp. 276, 43 text-figures, frontispiece and 30 plates. 31s 6d.

This fine volume from the Swedish Institute in Rome consists of papers by students of the School (pp. 1-144) and by those connected with the Swedish Near East Expedition. The joint publication is in honour of the Prince to whom the Institution owes much and who himself took part in the Expedition. The contributions are written in English, German, Italian or French.

In the first section, one of the most important articles (pp. 84-97) deals with the question discussed by Mr Carrington in *ANTIQUITY* (June 1933, pp. 133-52), the evolution of the later type of Roman tenement-house, and the stage which it had reached in Nero's day, when Rome was rebuilt after the great fire of A.D. 64. On the evidence of Tacitus and Suetonius, Dr Boethius, Director of the Institute and author of the article, concludes that the house built with brick-faced walls and carried on a stone framework now became popular in Rome, though invented before and indeed (as the author does not note) described by Vitruvius (II, 8, 17). It arose, he thinks, out of the practice of subletting the street-façades of the large town-houses. The whole is an interesting sketch of the New Rome then arising, and a wholesome reminder of how comparatively late was the growth of that Roman architecture whose strength has passed into legend.

Professor Martin Nilsson (pp. 132-139), deals with the almost contemporary development of the Triumphal Arch as a new architectural form, derived, as he believes, from large decorative statue-bases, placed across thoroughfares. This view has now the actual remains of the Fornix Fabianus to support it, though such statue-bases are not represented by the Tour Magne, whose true nature was discussed by the reviewer in *ANTIQUITY* 1931, v, 347. Again, the problem of placing heavy statues upon city-gates unadapted structurally to receive them, as at Rimini, has its place in the story of the evolution.

Lars Fagerlind (pp. 118-139) treats the development of the Corinthian capital in Roman hands with skill and discrimination when discussing the Italian examples, showing how the fashion materially changed between the 2nd century B.C. and the 1st century A.D. But the logic of his discussion is somewhat marred by the assumption that Vitruvius was describing a style two generations older than his day, and by his dating of the South-Gallic caps a generation too late. Nevertheless, his paper is a useful vindication of the reliability that is coming to characterize the method he uses, and its conclusions will have to be taken into account by architectural students, most of whom have yet to learn that Roman decorative art was not stationary, despite the efforts of writers like Mrs Strong.

A. Andrén (pp. 98-117) discusses the architectural terracottas from Ardea, the Latin stronghold as old as Rome. They come from the acropolis-temple, decorated

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first in the late 6th or early 5th century B.C., and beautified afresh in the 4th century, when the place had become a Roman colony. When the town had been ruined by the Samnite wars and was neglected amid Rome's mighty expansion, poor repairs were carried out, replaced by better work actuated by antiquarian interest of the declining Republic.

A link between these architectural studies and those of more literary flavour is provided by Wijkstrom's article (pp. 17-30) on the four Temples of Piazza Argentina, in Rome. He attempts to connect the existing remains with the literature about this area, identifying the temples with those of porticus Minucia. One cannot call the attempt convincing. On the whole, it endeavours to particularize with material of too general application, and tries to do this before the last word has been said upon the structural side, or, indeed, before the definitive account has appeared. Lest this appear too sweeping, let it be said that the reviewer has summarized these points in the forthcoming *Journal of Roman Studies*, where *minutiae* are more in place.

Bengt Wall (pp. 31-54), dealing with the same group of monuments, takes a more cautious line in seeking to identify them with the same porticus. As he observes, further exploration and study are needed before the identification can be clinched, and he contents himself with a scholarly account of the evidence about the porticus Minucia, as known in literature on epigraphy and as amplified by commentators on those sources. If he reaches no original conclusion, his work has the pleasant flavour imparted by a fresh and original discussion.

E. Wistrand (pp. 55-63) and Å. Åkeström (pp. 72-83) respectively summarize present knowledge of the sources about *atria*, the public halls connected with markets and auctions about which too little is known in actuality, and about the *Lacus Curtius*, while G. Saefflund (pp. 64-71), the author of a brilliant monograph on the Republican Wall, discusses the site and possible remains of the Porta Mugonia. These remains, in the reviewer's opinion, do not necessarily belong to a gate. But excavation on the spot would rapidly prove the point.

More literary still are the studies by Danielsson (pp. 1-16) of the Renaissance inventor of ancient texts, Annius of Viterbo, whose inventions are fortunately transparent; and the note by T. Kleberg (pp. 140-144) on a new consul of A.D. 182, Q. Tineius Rufus, and the cognomen Fausianus. These will not attract wide attention, but are scholarly pieces of work.

The section dealing with the Near East opens with a paper by Professor E. Gjerstad, on a 5th century B.C. palace at Vouni, in Cyprus. This deals with the affinities of the architectural features of the palace, bringing it into relation with both Greek and Anatolian influences. The article is written in English, but it is a misfortune that the Professor did not have his technical language revised by an English architect: 'runners and binders' can be easily understood as 'stretchers and headers'; but 'lying blocks' and 'raised blocks' are much less obviously blocks set lengthwise and blocks standing on their ends. This kind of pseudo-terminology makes the description of the wall-construction desperately hard to understand, especially for students who, like the reviewer, are not architects. The house is an interesting one in detail, with its primitive form of hypocaust for the sudatory, more ambitious in the later stages of its century of history. The analogies for construction connect its walling with the type that was current in Greece and Syria, where orthostats took the place of timber-framing as a weather-proof foundation for walls of sun-dried brick, while the masonry tradition in ashlar-faced walls also went back to wooden framing technique. Professor Gjerstad's discussion of these

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points is full and interesting. Valuable also is his discussion of the *liwan* type of plan, and its association with the Etruscan triple-cella temple. But his treatment of the atrium and the roofed courtyard must be revised with the discoveries in the Casa del Chirurgo at Pompeii, which show that the earliest house had no impluvium, but a floor of beaten earth. It is, however, questionable whether a sufficiently precise distinction has been made between the orthostatic construction which arrives as a substitute for a genuine and old-established timber-technique (as in Greece) and that which derives, in timberless lands (like Assyria and the East) from the need to protect brick walls from weathering.

The sculptures from the very interesting temple-site at Soli-Holades in Cyprus are treated by A. Westholm (pp. 172-188). The fine head of Alexander is an attractive, vigorous work, and the head of Agrippina from the temple of Isis is worth note. But the student of religion, while noting the humanizing effect of the introduction of Agrippina to the pantheon, will be more interested in the odd cult-statues which that influence tended to oust. There is a plentiful collection of these.

E. Sjoqvist (pp. 189-207) deals with the excavation of an Iron Age cemetery at Styli, also in Cyprus, in which the Crown Prince took a personal hand. The tombs were dromos-tombs, and the type of pottery ran from Cypro-Geometric III to Cypro-Archaic II: the bodies were buried outstretched on their backs, without coffins, and with heads towards the door.

Professor Persson (pp. 208-15) discusses the late-Mycenaean inscription from Asine, reading it as a Greek hexameter dedication to Poseidon. This is sure to attract considerable attention, but criticism must be left to those more competent in the matter.

Natan Valmin (pp. 216-27) collects the evidence for the association of tholos-tombs with tumuli and stelae, and this is an interesting presentation of a convincing case.

K. Hanell (pp. 228-37) contributes a slight and unimportant article on the development of the plan of Greek temple-courts.

Professor Lennart Kjellberg (pp. 238-45) has an important article on the oldest of the famous Aeolic caps from Neandria, now in the Ottoman Museum. Meurer, working in Constantinople, has found the element uniting the volutes and the palm-leaf corona; this was a primitive bead-roll moulding, which gives the cap proportion and elegance. The author inclines to date it to the 6th century.

Heribert Seitz (pp. 246-69) discusses the Ephebe from Subiaco, hitherto variously identified as a Niobid or Ganymede, or an athlete. Acting upon a hint from the late Guy Dickins, he goes on to suggest that the subject was Lycaon beseeching Achilles, and presents an interesting case, which must be considered by experts in Hellenistic sculpture, of which he suggests this is a Hadrianic copy.

Finally, E. Wiken (pp. 270-76) deals with the position of Kerke in the Fayum.

I. A. RICHMOND.

VORBERICHT VON DER AKADEMIE DER WISSENSCHAFT IN WIEN, IN VERBINDUNG MIT DEM EGYPTISKA MUSEET IN STOCKHOLM, UNTERNOMMENE GRABUNG AUF DER NEOLITHISCHEN SIEDLUNG VON MERIMDE-BENISALAME. By HERMANN JUNKER and OSWALD MENGHIN. *Proceedings of the Akademie der Wissenschaft in Wien*, 3 February 1932. pp. 99, 14 text-figures and 8 plates.

It is refreshing to get an account of discoveries so quickly and in such detail. The work at Beni Salama during the season of 1932 has been as fruitful as that in preceding years. A great variety of objects of this interesting phase of the neolithic culture has

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been found, and our knowledge of it considerably enlarged. The site is an extensive one ; but owing to the great care which has been exercised in its excavation only a small portion of it has so far been examined. It is to be hoped therefore that further work will solve some of the riddles and difficulties.

A matter of great interest is the presence of burials in the settlement. The original suggestion that these were deliberately placed with the face towards the family hearth does not seem to be borne out by the latest finds. The bodies have their heads mostly to the N, NW, or NE. A considerable proportion of them are immature, and it does not seem certain that it was the custom to make all burials in the village. It is just possible that a cemetery may yet be found in the neighbourhood.

The variety of pottery forms is surprising ; they seem to indicate a connexion with European ideas rather than with those of the Badarians. We must remember however, that the monotonous series of bowls of the latter come from graves, and this may account for the difference to a great extent. If we had more knowledge of the rather nebulous Tasians in Middle Egypt, or if we had more pottery of the earliest Fayum culture we might find greater similarities, for the flint-work of the Fayum has a marked affinity with that of Beni Salama. It is curious to see objects at Beni Salama which were first thought to be unique paralleled in Upper Egypt. The saw-edged flint knife with a well-made notch in the base is exactly like a pair found recently in the Badari District at Matmar ; and the human foot in pottery is the same as those under the red polished bowl from Khuzam near Luxor. This latter however is of Amratan date. GUY BRUNTON.

THE ALISHAR HÜYÜK : seasons of 1928 and 1929, part I. By ERICH F. SCHMIDT. Season of 1927, part II. By H. H. VON DER OSTEN and ERICH F. SCHMIDT. *Oriental Institute Publications : University of Chicago Press*, 1932. Pt. I, pp. xix, 293, and XLVII plates, seven in colour. 72s. ; pt. II, pp. xi, 134. 30s.

The first of these volumes deals with the periods of Alishar I to Alishar IV, inclusive. Pottery, stone, bone and metal objects, and 'funeral customs' are all illustrated.

The chief importance of the book lies in its illustrations. There are quantities of good black and white drawings and numerous inferior photographs, nearly all germane to the subject. There are also some coloured plates, which are exceptionally bad, being obscure in outline and incorrect in colour. So far as the description of the excavation is concerned, the standard is not so high. No levels whatever are given, except under the phrases 'level I' or 'level II' etc., expressions which are scientifically valueless. The position of Alishar II in relation to Alishar III, is still unknown in America—an amazing piece of self-criticism. One of the most important periods dealt with is Alishar IV, a fact that makes it all the more regrettable that the type of paint employed on the pottery of that period is not described. It is, of course, matt. So far as the period of Alishar I is concerned, the Americans appear to have been badly puzzled by it. It is not an easy period to understand, but that is no reason for failing to know of the material found at Bos Eyuk. Nor is it any reason for failing to publish the characteristic shape of the pottery of that period.

What is not stated in the book is that Alishar I is a period which is parallel to Bos Eyuk, in so far as that latter site is known. It has no relation (so far as civilization is concerned) with the periods of Troy I or Yortan, and is completely unlike anything known in the Aegean. It is followed by Alishar II, a period of civilization strikingly different from its predecessor, being due to immigrants of Iranian type who ultimately spread to Greece about 2400 B.C. (see Goldman's *Eutresis*). Next, a new type of people (also oriental

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in origin) destroyed the Alishar II civilization, and spread to the Aegean to form there the culture of the Middle Helladic period. Still later (perhaps c. 1500 B.C.) a fourth people appear, decorating their pottery with compass-drawn concentric circles in matt paint. The relation of these with the 'proto-geometric' folk of the Aegean is probable, but as yet ill-defined. The Alishar IV people are of unknown origin, but are certainly not from the west. So much, to the present writer's mind, is obvious from the finds, though none of this is mentioned by the excavators. These results destroy utterly any theory of a 'centre of diffusion' in Asia Minor, and suggest further exploration to the east, beyond the Taurus mountains. For even when parallels between Asia Minor and the Aegean can be noted, they are due to migrants pressing westward. Who the peoples of Alishar II, III and IV were we can only know by going eastward, to Armenia, and, perhaps, beyond.

All those who wish to discover what led to the highest civilization of the world have felt well aware of the great responsibility undertaken by Dr Breasted. They can only feel grateful to him for having found wonderful material for study, but, at the same time, they must regret that expensive work at a magnificent site should still leave the prehistory of Asia Minor as a subject more or less confined to theory. Undoubtedly most archaeologists have waited on this excavation in hope, and with confidence in American capacity. It is not too much to say that those who have hoped and waited will experience, on reading this report, the most bitter disappointment.

The report on the season of 1927 deals with 'funeral customs', small objects (metal, bone, stone, etc.), and coins, found at Alishar and bought locally. All are illustrated. Since no stratification is given any true value it may have appears to be confined to the coins, which at least are datable, if unimportant. They are described by Mr Newell in an adequate way. Unfortunately, similar treatment is not accorded to the other objects discussed. Figurines, seals and carved bone boxes (hollow tubes) are all badly described and unstratified. Moreover, they are, most of them, unusually badly photographed. Such is the character of the book that the reader, unable to check statements, is not likely to accept any observation which is of importance, for fear of later discovery. With this reservation it may be noted that 'bored hammer axes occur in Alishar II' and 'pot and cist graves occur in Alishar I . . . cist graves only in Alishar II'.

A description of the colour of the obsidian found at Alishar would have been of infinitely more value than a monochrome photograph. The latter is all that has yet been vouchsafed.

No archaeologist can afford to ignore any of the books yet written about Alishar. It is a most important site,—one of the most important yet dug,—from the point of view of those who wish to correlate prehistoric events in different parts of the Near East. It is a pity therefore, that all the books on this site are so bad. THEODORE BURTON BROWN.

THE ARDAGH CHALICE. A description of the ministrar chalice found at Ardagh in county Limerick in the year 1868; with a note on its traditional conformity to the Holy Grail of legend and story. By L. S. GOGAN, Academy of Christian Art of Ireland. pp. 94 and 18 illustrations. Browne and Nolan, Dublin and London, 1932. 5s.

This little book consists of a minute study of the craftsmanship and associations of the magnificent silver chalice which was found, with other objects, near Ardagh. It is prefaced by notes on chalices and the material of which they were made, and followed by some remarks on the Holy Grail.

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The author, after an interesting discussion, fixes A.D. 1000 as the most likely date for the manufacture of the chalice. The materials employed in its construction include gold, silver, brass, bronze, copper, lead, iron, crystal, amber, garnet, enamel, amber paste and blue glass, and give some idea of the resources of the workshop of a master craftsman at the end of what has been called the Dark Ages. The design is worthy of the materials, and the skill of the workman of both, for the chalice consists of 354 different parts, and the technique includes filigree work, two kinds of enamelling, chasing, engraving and jewel setting, besides welding.

This exhaustive study of one of the finest works of the Middle Ages is fully illustrated, and contains much incidental information on medieval lore and art. DINA P. DOBSON.

GLASTONBURY ABBEY BEFORE THE CONQUEST. A translation by H. F. SCOTT STOKES, formerly a scholar of the two Colleges of Our Lady of Winchester, of William of Malmesbury 'On the antiquity of the Church of Glastonbury'. *Glastonbury: Central Somerset Gazette. pp. 71 and plan. 1s.*

Besides tracing the early history of the settlement at Glastonbury, William of Malmesbury enumerated the grants conferred on it by various kings from British times to the Norman Conquest. The amount of land held is amazing, and Mr Stokes' map shows its distribution as far as North Somerset is concerned. By the 12th century the outstanding sanctity of the place was still fully recognized. As William says, 'the antiquity of the place and the great number of Saints there have made it so holy that one would hardly dare to spend the night in watching there, and he who by day should spit would be aware of his shocking profanity and burn with shame. No man has brought so much as a hawk or a horse within the adjoining cemetery and gone away without hurt to himself and his possessions. Those who were to suffer the ordeal by fire or by water have all, so far as living memory goes (with one exception), rejoiced at their escape after going there to pray for it'. At the same time, the abbey, with its exclusive privileges, must have been a thorn in the side of the bishops of Wells, who were excluded from entering it or its possessions. It is interesting to see that Britons were still regarded as distinct from Saxons—'this is the origin of the fable commonly told by the fable-telling Britons and their bards, that an absurd fairy called Morganis brought the wounded Arthur to the Isle of Avalon to be healed of his wounds. And when the wounds are healed the King will come back in majesty and right to rule over the Britons as formerly (they say). And so they await his coming to this day, as the Jews await the coming of their Messiah, and they surpass the Jews themselves in their fatuity and infidelity and in their vain imaginings'.

The translation is pleasant and racy, and those who love Glastonbury will be grateful to Mr Stokes for helping them to learn something of the history of the abbey.

DINA PORTWAY DOBSON.

VIERTER VORLÄUFIGER BERICHT ÜBER DIE VON DER NOTGEMEINSCHAFT DER DEUTSCHEN WISSENSCHAFT IN URUK UNTERNOMMENEN AUSGRABUNGEN. By ARNOLD NÖLDEKE, E. HEINRICH, H. LENZEN, A. v. HALLER. (Reprinted from *Abhandlungen d. preuss. Akad. d. Wissenschaften*, Jg. 1932, *phil. hist. Kl.*, 6). *Berlin*, 1932. 14.50 RM.

The most impressive experience of a recent visit to Iraq was a descent of the deep shaft dug by the German excavators at Warka, the biblical Erech. From the ground level of the earliest monumental building yet found in Mesopotamia, you wind down

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60 feet to the alluvial bottom of the land of Sumer. On still marshy ground the first settlers had made a sort of platform of reeds, laid criss-cross in regular strata, to dwell on. Above the reed bed, 5 m. thick, the walls of the shaft bristle with relics, providing a concrete summary of Mesopotamian prehistory from the first moment the land was habitable till its inhabitants had accumulated the wealth and leisure to erect monumental temples and devise a system of writing and numeral notation. The pottery from the shaft is here described very fully by von Haller.

At the bottom lay the fine painted ware already familiar from al 'Ubaid, including the same sauce-boat type and associated already with imported obsidian. Already, however, in the second stratum (but the excavators numbered their strata from the top downwards, 1 being Archaic Sumerian) appear sherds of new fabrics first identified in Mesopotamia at this site; the new fabrics oust the painted ware altogether by stratum 6 (XIII). The fabrics in question are monochrome and owe their aesthetic effect to surface treatment, slips and burnish. One is red, others grey. Among the latter two varieties must probably be distinguished though the distinction is not made in the present publication. One fabric with a burnished black slip reminds one of Yortan pottery and is presumably a carboniferous ware, owing its colour to carbon; the other is more probably ferruginous and grey because of the reduction of the iron oxides in the clay by the process described classically by Forsdyke in connexion with the Minyan ware of Greece. Analysis would be desirable to settle the point. The red and grey wares seem to denote a break with the normal Mesopotamian tradition and might according to Frankfort have been introduced by Armenoids from the north. Moreover they are common to Mesopotamia, India and Anau and may belong to a complex to which the potter's wheel and oven and presumably also wheeled vehicles may also belong. None of these speculations find place in the report, whereas Heinrich emphasizes the general continuity throughout the prehistoric periods. In any case the red and grey wares are relatively rare, the bulk of the pottery found with them being coarse and pale but related in form to that of the lower levels.

The 'foreign wares' last sporadically into stratum 14 (v), but are virtually absent in 16 (II/III) which should correspond to the Jemdet Nasr period as known from Ur and Kish. The appropriate polychrome pottery is, however, practically unrepresented, and the layer is so dated because of the form of the bricks and of the script.

The excavations at Erech are memorable not only because they have revealed a completely new phase of Babylonian civilization and the first stages in the development of Sumerian writing and religious architecture, but also because the excavators after each campaign have promptly issued a perfectly objective but thoroughly adequate account of their discoveries illustrated by a sufficiency of figures and plans which suffer if anything from excess of detail. Their results are thus available for the assistance of, and analysis by, other excavators and researchers. Is it too much to demand that this practice, initiated long ago by Sir Arthur Evans in Crete, should be imposed upon other excavators in the Near East? Without it progress must be slow, synthesis is impossible and valuable evidence may be ignored and destroyed.

V. GORDON CHILDE.

TARA: a pagan sanctuary of ancient Ireland. By R. A. S. MACALISTER. *Charles Scribner's Sons*, 1931. pp. 208, and 16 illustrations. 3 dollars.

Professor Macalister's previous study of Tara was published in the *Proceedings of the Royal Irish Academy* for 1919. To the archaeological material there is unfortunately little to add, though aerial photography, while apparently leading to no new discoveries,

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now provides several clear and useful plans. Moreover, the account is entirely rewritten, with some additional material and certain speculations omitted, and is made accessible to a wider public.

There is little enough about the Hill of Tara today to indicate its fame in early Ireland, but its grassy mounds have this in common with so many prehistoric sites ; they command extensive views over the surrounding plains, and the word *Tara*, in its Irish form, is said to mean ' a place which commands a prospect '. In chapter 1, which occupies nearly half the book, we have descriptions of the extant remains and topography of the hill, following the guidance of *Dindshenchas*, a compilation of folklore in which the relevant material must have been written, in the opinion of Dr Macalister, at Tara. The chapter includes a photograph and descriptions of some remarkable rock-cut trenches discovered during the disastrous search for the Ark of the Covenant conducted some years ago by misguided followers of a certain religious faith. The remaining five chapters are concerned with the historical and legendary accounts of Tara in its origin, splendour and decline. The author claims a Bronze Age foundation for the site, and though it must be admitted that the evidence is not conclusive, many archaeologists will be inclined to agree, and all to hope that proof will be established by excavation. Much of the substance of these chapters is ethnographical in character and some of Dr Macalister's interpretations must be considered conjectural. He has correlated incidents in Irish legend with the myths of primitive man in many parts of the world, and has performed a valuable service in giving new life to names and tales that constant repetition had made frankly tedious to the inquirer into the evolution of early Ireland. With the decline of paganism Tara soon lost its religious importance, and it was little more than a name when, in the 9th century, the Northmen founded Dublin not far away, in the same ' metropolitan ' region of the island. Throughout, the author's virile style and reasoned descriptions compel attention to a somewhat difficult subject. E. ESTYN EVANS.

DIE BECHERKULTUR IN DEN NIEDERLANDEN. By DR F. C. BURSCH.
Leiden : E. J. Brill, 1933. pp. 85, 41 figures and 6 plates. Price not stated.

In this work, which represents a doctoral dissertation at Marburg, we have a welcome account of the Beaker-culture in the Netherlands enriched by the author's own researches. If there is one fault that we have to find it is the entire absence of any map. This omission is especially serious for the many foreigners who will certainly wish to read the book. We do not wish to imply that the author should have treated his subject differently, but we feel that his arguments would in some cases have made a more direct appeal if illustrated by maps. In any case a key-map to sites is essential in a work of such general interest. In other respects the work is well produced, the barrow plans and sections being especially clear.

The first section of the book is devoted to a description of the different forms of grave associated with the Beaker people in the Netherlands, illustrated by the author's excavations carried out for the most part in Gelderland. Bursch rightly stresses the importance of this line of enquiry and deplores its relative backwardness in other lands, though without making due allowance for the favourable soil conditions of his own country. Fundamentally he distinguishes two types of barrow with wooden structure : (1) the barrows with circular palisades or lines of posts (*palisaden- or pfostenhügel*), and (2) cupola barrows (*kuppelgrab*) with a circular chamber built up of horizontally disposed logs, a type from which he does not distinguish separately the bee-hive (*bienenkorb*) type of some authors. In the northern province van Giffen's excavations

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have revealed a number of beakers in megalithic tombs, and Bursch supports the view that the *palisaden-* and *pfostenhügel*, which are especially typical of this area, are to be ascribed to megalithic influence (p. 62). We may mention here an interesting case of horse-burial in a *kuppelgrab* at Garderen, Gelderland, which also contained beaker inhumations; the horse was provided with a miniature cupola of its own within the main chamber (p. 31).

Turning in his second section to grave-goods, Bursch distinguishes two main classes of beaker, these with a smooth profile (*s-formig* or *geschweifte*) and those with marked definition of neck and body (*glocken*); the latter are further divisible into two groups, the true Veluwer type and the cruder version with a less defined profile, not always distinguishable from the *geschweifte* class except for the zoned arrangement of its decoration. Of these forms the most interesting; as a peculiarly Dutch form and local to a single province, is the Veluwer type, low and broad with sharply defined and almost vertical neck and zoned ornament obtained by a stamp (*stempeltechnik*)*. Both its form and the metopic arrangement of decoration on the shoulder have led Bursch to ascribe this type ultimately to the influence of Megalithic pottery on the periphery of its distribution in Holland, while its confined distribution indicates a date subsequent to the first incoming of beakers and their spread to Britain. In addition to the beaker types Bursch notices the large vessels, known as *glockenurnen*, which have frequently been found with megalithic pottery as well as with beakers, and may yet be recognized in our own country.

There are in Holland two main centres of Beaker-culture, the northern and the province of Veluwe with which the western and southern regions go fairly closely. Thus, whereas in the north, palisade and post-graves, and beakers with smooth profile predominate, in Veluwe cupola-graves and bell-beakers are dominant, and above all it may be said that while in the north it is the Megalithic, in the south it is the Beaker-culture that is of greatest importance. However, as Bursch points out, it would be a mistake to overstress these differences, since in spite of them the Beaker-culture of Holland retains a certain unity. Though it is true that the thick-butted Nordic celt is found exclusively with the *geschweifte becher*, there is no general clear distinction as between the grave goods associated with the different types of beaker, nor indeed do the grave-types conform closely to any ceramic division.

Of previous workers Holwerda and Remouchamps regarded both the main groups of Dutch beakers as contemporary, whereas Van Giffen, Åberg and Stampfuss classed the smooth-profiled beakers as Neolithic and the bell-beakers as *Æneolithic*. Between these two schools Bursch steers a middle course with a tendency to support the former; while admitting the priority of the *geschweifte becher* he maintains strongly that the two classes are closely allied. The conclusion that the *glockenbecher* arrived in Holland later certainly seems justified by the evidence, and it is interesting to note from the tables that metal objects (other than gold) were found in Holland on six occasions with *glockenbecher* but on no single occasion with *geschweifte becher*.

It is of special interest to British archaeologists to note that Bursch distinguishes two main classes of beaker pottery in Holland, which correspond to some extent with our own classes B and A + C. Once again, as Bursch points out, the fact that we have in Britain no examples of the Veluwer type of bell-beaker indicates that the beaker-cultures reached our shores relatively early, representing as it were a prolongation of the

* Bursch rightly relegates to the past the idea of decoration by a notched wheel (p. 40).

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beaker movements into Holland. Finally we may draw attention to fragments of an overhanging-rim cinerary urn of English type found in the neighbourhood of Hilversum.
J. G. D. CLARK.

BULLETIN OF THE AMERICAN SCHOOLS OF ORIENTAL RESEARCH (JERUSALEM AND BAGHDAD), Number 50, April 1933. Issued quarterly and sent to all contributors and subscribers of \$1.00 and upwards. *Edited by* PROF. W. F. ALBRIGHT, Johns Hopkins Univ., Baltimore, Md. *European agents:* J. C. Hinrichs'sche Buchhandlung, Leipzig, C.I.

The jubilee number contains, like its predecessors, much of lively interest. The most important contribution is a translation and discussion of parts of the Ras Shamra epic, by the Editor (see ANTIQUITY, v, 405-413). The composition is now dated on linguistic grounds to between 1700 and 1500 B.C. and the tablets themselves cannot on archaeological evidence be later than about 1400 B.C.

A reconnoitring expedition in Transjordan (December 1932) discovered near Kilwa 'on the sides of a hard sandstone hill . . . carved figures of animals, mostly of the ibex type. . . . "An outline of five holes had been punched in the rock, and then the sculptor had proceeded to chisel out the lines of the animal, working from right to left in diagonal lines . . . A flint chisel was probably used"'. There was no datable evidence, but the Editor suggests comparison with the frescoes of Teleilat el-Ghassûl in the Jordan valley 'which belong to the Neolithic of the second half of the fourth millennium (see *Bulletin*, no. 48, pp. 10-13)', and with the similar frescoes found by Dr Herzfeld at the Neolithic village near Persepolis. We might add the instance from near Lake Gokcha (Sevang) in Armenia (see ANTIQUITY, vi, 480) where ibexes are also represented. From this it seems clear that, at a date provisionally fixed at 4500 to 4000 B.C. the northern parts of Arabia and the adjacent uplands were roamed over by hunters who lived mainly upon the ibex and other game which must then have abounded there. Perhaps we may also associate them in Transjordan with the rich flint workshop sites so common east of Amman. It was doubtless these hunters who, some of them, were driven by desiccation and game-scarcity to settle in the fertile crescent of the valleys of Mesopotamia, Elam and India, where they developed the world's earliest civilization. The change of life from roaming to settlement must have been spread over a long period. We shall not know much more about its details until more excavations have been made in the caves and early villages of Iran.

O.G.S.C.

NAGA-ED-DÊR: part III. A provincial cemetery of the Pyramid Age. *By* GEORGE A. REISNER. *University of California Publications; Egyptian Archaeology*, vol. vi. Oxford University Press, 1933. pp. 386, 56 plates, 3 maps, 435 text-figures.

Naga-ed-Dêr is situated on the west bank of the Nile near Gîrga, almost opposite Abydos and exactly opposite the Third Dynasty site of Bêt Khallâf. In two previous volumes, *Naga-ed-Dêr* pts. I and II, Dr Reisner has described three cemeteries of Dynasties I-III found at this place. The present volume deals with a fourth cemetery which was the burial ground of one of the same communities in the succeeding period of Dynasties I-VI.

In an earlier number of ANTIQUITY (March 1933), I have expressed my opinion that the primary object of an excavator's report should be not the production of a work of belles lettres, but simply and solely a most exhaustive and complete record of everything

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that he has found in the form of inventories, tables and lists, together with a brief summary of the conclusions to which they lead. *Naga-ed-Dêr* corresponds precisely to my definition; it is the fulfilment of the field-worker's prayer. In it is everything which the Egyptian archaeologist can ask for; it leaves no question of any kind in regard to the site unanswered, and its information is conveyed in a form which admits of complete verification and control at every step. There is all the more reason to be grateful for this inasmuch as the cemetery was by no means rich in striking or beautiful objects. In comparison with many other sites that he has worked Naga-ed-Dêr must have seemed to Dr Reisner rather a poor place; and it is infinitely to his credit that he has succeeded in making of it an archaeological document of great importance. In his skilled hands it becomes the instrument for tracing the whole development of provincial architectural art and industry during a most difficult and intricate period of transition, between the archaic and the better known historic periods. Of the immense industry of the excavator, his almost religious devotion to the smallest minutiae of detail, and his determination to win every grain of information that can be sifted from his mass of material every page of this volume gives incessant evidence. His methods in the field have never been excelled, and it is sufficient to say that they are adequately interpreted by his methods of publication. Finally the inferences which he feels justified in drawing, soberly and with moderation, from his methodical digest of the facts, are of real interest and mark distinct progress in the building up of the great fabric of Egyptian archaeology.

The essential core of the book is to be found in pp. 193-364, which give the descriptive list of the tombs arranged in numerical order. With an economy of space made possible by his exact system of notation and classification, the author conveys in each case, within a few lines, a complete account of the topography, burial custom and architecture of every tomb, as well as a description of every object found in it. No less than 435 very neat and clear drawings, often containing a number of objects, are inserted in this part of the text so appropriately as to make the reading very easy and agreeable. A long series of admirable photographs of tombs and objects in the 56 full-page plates at the end of the volume completes this primary exposition of the material.

Preceding the description of the tombs, though logically based upon it, are three long chapters devoted to a discussion of the types of graves and burials, the objects found and—in a very brief summary—the chronology and history of the cemetery. These chapters are not literary in form; that is not their intention and could not be. They contain a schematic digest of the material in all its forms and combinations, so arranged as to answer any questions that may be asked. The author's own conclusions, in very brief and succinct phraseology, are given after each series of tabulations. These chapters certainly cannot be read like a novel, but I cannot endorse even the author's own slight disparagement of them as a 'cumbrous marshalling of figures'; the admirable clarity of the arrangement and the conspicuous excellence of the printing render them perfectly easy to study. There is scarcely a column or a percentage that could have been safely omitted, even though they may not be all needed simultaneously and at every reading; for *Naga-ed-Dêr* will be read more than once or twice by everyone who is studying this period. And every field-archaeologist, whatever his province, may greatly profit by studying the sheer technique of these methods.

For his general conclusions Dr Reisner has enriched his own material by a collation of the results obtained by others on neighbouring or contemporary sites, especially Abydos, Bêt Khallâf, Mahasnâ, Hu and Denderêh. When he has added the results of these to his own work at Gizeh and in Nubia he is in a position to draw a

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pretty complete picture of the general evolution of custom and art in Upper Egypt from the earliest times to the end of the Sixth Dynasty. I quote in full a very brief summary from p. 185 which the general archaeologist may be glad to transfer to his own notebooks.

'The series of archaeological groups which took their source in the Neolithic culture of the Early Pre-Dynastic period may be conveniently distinguished as follows :—

- (a) Early Predynastic or Neolithic group.
- (b) Middle Predynastic or Early Copper group.
- (c) Late Predynastic group ; practical use of metal.
- (d) Dyn. 0 to the reign of King Zer ; practical use of metals ; writing ; first period of intensive manufacture of stone vessels ; beginning of sculpture (statuettes, figures and small reliefs) ; united monarchy.
- (e) King Zer to accession of Khasekhemuwy ; culmination of the Early Dynastic period ; second period of stone vessels ; continued development of all arts and crafts.
- (f) King Khasekhemuwy to accession of Sneferuw ; third period of stone vessels (period of degeneration) ; beginning of wheel-made pottery ; first period of stone architecture ; temples of Zoser at Step Pyramid.
- (g) Dyn. IV ; second period of stone architecture (large limestone blocks and granite) ; the building of the royal pyramids at Medûm (?), Dashûr, Giza and Abu Roash ; culmination of statuary and relief.
- (h) Dyn. V-VI ; impoverished royal family ; third period of architecture (spread of technical knowledge of quarrying and construction in stone) ; spread of sculpture in all its forms ; introduction of new corpus of stone vessels and new pottery forms ; end of the first union of Upper and Lower Egypt and the first period of cultural development, followed immediately by a complete breakdown of the administration and of the arts and crafts'.

Dr Reisner is making steady progress in publishing the results of his tremendous labours in the Nile Valley during the past 33 years ; another monumental book is announced as being actually in the press. When his great primary volumes have all been completed—or even before—there is no doubt that the public would give a very warm welcome to some small popular books in which he could give free rein to that gift for description, of which signs often peep out, almost in spite of himself, even in his most serious writings.

DAVID RANDALL-MACIVER.

THE STORIE OF THE LOWER BOROWES OF MERTHYRMAWR. By JOHN STRADLING (1598-1601). Edited by HENRY JOHN RANDALL and WILLIAM REES. Introduction and Notes by H. J. RANDALL. pp. XII, 199, with 2 maps. South Wales and Monmouthshire Record Society, Publication no. 1, 1932. Annual subscription to the Society, 21s.

It is the pleasant duty of the reviewer of this book to congratulate South Wales and Monmouthshire upon the formation of its Record Society and to welcome the Society's first publication. It is however a matter of general regret that the Society should lose, almost at its inception, the services of its distinguished and erudite President, through the death of Sir Joseph Bradney.

The choice of the Society's first volume is a particularly happy one. This manuscript, which gives the history of litigation to prove titles to the manor of Merthyr Mawr (mis-spelt throughout Introduction and Notes as *Merthymawr*) and the sub-manor of Candleston, throws much light upon the social history of Glamorgan. So much

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research is indeed necessary into the history of the county that it is gratifying to the social historian to know that, coincident with the formation of this Society, there was formed a committee to arrange for the publication of a History of Glamorgan.

The history of Glamorgan is the history of two cultures—one the native Welsh culture and the other an exotic culture, that of the feudal, and manorial, system which links it with the general history of the English Plain. While it is true that the intrusion of this culture has metamorphosed much of the life of Glamorgan it would be incorrect to suppose that it obliterated the native culture or even endangered it seriously. Politically, the intruders assumed control but the Welsh language and culture remained in strength in the Vale of Glamorgan down to recent times. The process of extinction began with the influx in the (comparatively recent) industrial period and has been checked to some degree by the resurgence of national sentiment in the post-war years.

This intrusive culture in Glamorgan has been particularly fortunate in its historians. To a distinguished list of names which includes those of Mathews, Clark, and de Gray Birch must now be added the names of Mr H. J. Randall and Dr William Rees. The Introduction and Notes to this volume show Mr Randall, in this case, as a scholar of culture and eminence in this particular field and no remarks by the present reviewer will be necessary to prove that the editing of this text is a remarkable achievement. Note after note testifies to Mr Randall's thoroughness.

But there is another aspect to which I am constrained to refer at some length. Under the present scheme of things, the Record Society will do full justice to the history of the exotic culture in Glamorgan, as this volume proves admirably. But the same volume shows that the Society has no editor competent to deal with the history of the native culture with the same scholarly thoroughness. No Record Society—and no History of Glamorgan—can fulfil its function and deal justly with history unless both cultures are given their right and proper place. In the late Sir Joseph Bradney, Monmouthshire had an historian endowed with a knowledge of the history of both cultures. Glamorgan has none. Is it too much to hope that the Record Society will invite on to its Editorial Board a scholar who can fill this gap? I make the same suggestion to the *History of Glamorgan* committee.

A reference to some *lacunae* in the present volume will justify these statements. When the late Chancellor Fisher has published in English (*Arch. Camb.* 1928, p. 369) a philological note on the *Mawr* of Merthyr Mawr, the editor discusses the origin of the place-name giving Fisher's explanation, but in other cases (pp. 135, 141) he 'gladly deposes [the interpretation] to the philologists' as if the philology of Welsh place-names were particularly difficult. The interpretation of *Cauntleton* however is given more than a page and one must agree with Professor Gruffydd (*Y Llenor*, xi, p. 192) that the explanation of the place-name (p. 164) is incorrect. The Cantelow family did not, as Gruffydd points out, take its name from Candleston any more than the Bonvill family took its name from Bonvilston. The reverse is the case: *-ton* is a suffix added regularly to a personal name already existing.

The reference to Professor Gruffydd leads me to refer to another point which is given scant justice in the Notes. The text refers to 'a cople of herehautes . . . John Gamage gent and Mericke David rhymer' and in the same context to 'William Basset of Bewper'. The editor supplies a useful note concerning Basset but concerning the 'heralds' he writes: 'I cannot find any certain reference to either of the two "herehautes" immortalized in this passage'. 'Yet', writes Professor Gruffydd, 'Cadrawd or Dafydd Morganwg or indeed scores of Glamorgan Welshmen who are now living,

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could tell him much about "Mericke David"—for this is the famous Meurig Dafydd from Llanisen, a collection of whose works in his own hand will be found in the Llanover B5 MSS: these were composed between 1580 and 1595. (See G. J. Williams's *Iolo Morganwg*, p. 109)'.

These are not the only instances which could be adduced to prove the inadequate treatment of the history of the native culture, and one cannot over-emphasize the fact that an intimate acquaintance with the Welsh language and with Welsh cultural history is essential for the very important work involved in editing the Society's publications. The Society should ensure that in its remaining publications such criticisms as are made here are rendered impossible.

The volume also includes interesting documents relating to coal-mining in the Lordship of Kilvey and an important list of Papists in Monmouthshire in 1678, all edited by Dr Rees.

IORWERTH C. PEATE.

ARKTISKE HELLERISTNINGER I NORD NORGE. By GUTORM GJESSING.
Oslo : H. Ascheboug & Co., 1932. 15 KR.

Two distinct groups of prehistoric rock-engravings have long been known in Scandinavia. The later of these seems in part to date back well into the Bronze Age; the other is somewhat more ancient. While evidence has been adduced to prove that in time it cannot be older than the Neolithic period elsewhere—examples of the drawings have been found carved on rocks stated by the geologists to have been below sea level at any earlier date—it has long been considered probable that culturally speaking it is to be assigned to the Arctic culture. The Arctic culture, in part at any rate, seems to have had its root in the Mesolithic cultures which occupied the southern parts of Scandinavia until ousted by the various newcomers who formed there the Neolithic civilization. This latter, however, seems to have had but a limited distribution in the country, and elsewhere in the hinterland the older cultures survived and continued to evolve on their own. It is thought probable that it was folk belonging to these cultures who made the earlier drawings.

The rock-engravings belonging to this older series have been found at a number of sites along the Norwegian coast and occasionally, where the mountain barrier declines, as far inland as areas now in Sweden. The present volume deals with a number of sites in Norway, far to the north. Two series of engravings are recognized, an earlier comprising only animals, and showing a more or less naturalistic technique of execution, and a later where designs and patterns appear. These are thought to date to the Bronze Age, the former only belonging truly to the Arctic culture.

The volume is well got up. There is a short account given of the topography of the finds, followed by a brief description of the methods used in making the carvings, and in conclusion there are some notes on chronology, etc. At the end of the volume there are no less than 54 full page plates—some in half-tone—illustrating the rock-engravings under review.

Anyone interested in such matters will have, of course, to take full account of this work, which is in the true sense of the word a monograph on the subject.

M. C. BURKITT.

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- page 69, line 3, for words omitted see p. 215, lines 12-13
- „ 264, „ 28, the reference to plate VII should have been inserted on p. 265,
line 9, after 'youths'
- „ 357, „ 29, for Eshunna read Eshnunna
- Plate I, facing p. 296, underline, for Greenford read Greenfield
- See also page 228 for other corrections

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